

C47 Full names

FullName	Type	Default	Label	Catalog	Category	Extended description
Sun	Character		☉		Characters	Character ☉ (Fontcode : 2299 ₁₆)
(Data) entry?	Command (logical)		ENTRY?	ENTRY?	Programming	Test internal entry flag for data entry
(Plot) Central	Command (submnv)		CENTRL	CENTRL	Measurement	Orthogonal curve fit and show parameters, requires 30 data pairs (Info : Opens the graph mode and (re)starts menu SCATR)
[←] executes DROPx or CLX	Flag	CLEAR	←DROP		User interface	SET for [←] executing DROPx (when not in NIM) ; CLEAR for [←] executing CLX (when not in NIM)
[future] Curve smoothing	Setting (strike)	OFF	CURVE		Plotting	Switch on [future] curve smoothing ; not programmable - in PEM, use flag PLcurve (Info : Reserved for future use)
[future] Curve smoothing	Flag	CLEAR	PLcurve		Plotting	SET for [future] curve smoothing ; CLEAR for [future] curve smoothing inactive (Info : Reserved for future use)
[Σ+]DRG	Setting (pgm)	OFF	→DRG		Customisation	Assign DRG to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as [DRG] (inverse))
[Σ+]f/g	Setting (pgm)	OFF	→f/g		Customisation	Assign f/g to [Σ+] hotkey for NORMAL as well as USER mode ; disables longpress on [Σ+] and the use of this key as A in ASM two character search (Info : Shown in KEYMAP as [f/g] (inverse))
[Σ+]g	Setting (pgm)	OFF	→g		Customisation	Assign <g> to [Σ+] hotkey for NORMAL as well as USER mode ; disables longpress on [Σ+] and the use of this key as A in ASM two character search (Info : Shown in KEYMAP as [g] (inverse))
[Σ+]i _☉	Setting (pgm)	OFF	→i _☉		Customisation	Assign i _☉ to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as [i _☉] (inverse))
[Σ+]R↑	Setting (pgm)	OFF	→R↑		Customisation	Assign R↑ to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as [R↑] (inverse))
[Σ+]USER	Setting (pgm)	OFF	→USER		Customisation	Assign USER to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as [USER] (inverse))
[Σ+]x!	Setting (pgm)	OFF	→x!		Customisation	Assign x! to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as [x!] (inverse))
[Σ+]α	Setting (pgm)	OFF	→α		Customisation	Assign α to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as [α] (inverse) and in simulator as bright orange key)
[Σ+]Σ+	Setting (pgm)	ON	→Σ+		Customisation	Assign Σ+ to [Σ+] hotkey for NORMAL mode ONLY & deactivate USER mode (Info : Shown in KEYMAP as Σ+ (normal))
°C to °F	Function (monadic, linked)		°C→°F		Temperature conversions	Convert degrees Celsius to degrees Fahrenheit (TI : °F:)
°C to K	Function (monadic, linked)		°C→K		Temperature conversions	Convert degrees Celsius to Kelvin (TI : K:)
°F to °C	Function (monadic, linked)		°F→°C		Temperature conversions	Convert degrees Fahrenheit to degrees Celsius (TI : °C:)
°F to °R	Function (monadic, linked)		°F→°R		Temperature conversions	Convert degrees Fahrenheit to degrees Rankine (TI : °R:)
°F to K	Function (monadic, linked)		°F→K		Temperature conversions	Convert degrees Fahrenheit to Kelvin (TI : K:)
°R to °F	Function (monadic, linked)		°R→°F		Temperature conversions	Convert degrees Rankine to degrees Fahrenheit (TI : °F:)
°R to K	Function (monadic, linked)		°R→K		Temperature conversions	Convert degrees Rankine to Kelvin (TI : K:)
√(1+x ²)	Function (monadic)		√(1+x ²)	√(1+x ²)	Mathematics	Calculate √(1+x ²)
☐ f [♯] layout	Layout	OFF	☐ f [♯]		Customisation	☐ f [♯] keyboard layout (R47v3) ; selecting this layout changes base keys and deletes all keyboard assignments (KEYS.R) ; ☐ denotes the Black key : in the R47 layouts: R47v1 (f [♯] ☐) and R47v3 (☐ f [♯]), the [☐] key is the hotkey that can be used for special key assignments in NORMAL mode, using menu ☐ KEY (TI : R47v3 L.Shift is f [♯] , R.Shift is f [♯] ; the layout is kept even on RESET)
f [♯] ☐ layout	Layout	OFF	f [♯] ☐		Customisation	f [♯] ☐ keyboard layout (R47v1) ; selecting this layout changes base keys and deletes all keyboard assignments (KEYS.R) ; ☐ denotes the Black key : in the R47 layouts: R47v1 (f [♯] ☐) and R47v3 (☐ f [♯]), the [☐] key is the hotkey that can be used for special key assignments in NORMAL mode, using menu ☐ KEY (TI : R47v1 L.Shift is f [♯] , R.Shift is ☐ ; the layout is kept even on RESET)
f [♯] g layout	Layout	OFF	f [♯] g		Customisation	f [♯] g keyboard layout (R47v2) ; selecting this layout changes base keys and deletes all keyboard assignments (KEYS.R) (TI : R47v2 L.Shift is f [♯] , R.Shift is g ; the layout is kept even on RESET)
1's complement	Setting (pgm)	OFF	1COMPL	1COMPL ☐	Bits and bytes	Set 1's complement mode for Long integer (ISM = 1) (Info : <w> in SBI indicates word size (menu BITSET) ; SBI <w>:1 is shown if flag SBint is SET)
10 to the power x	Function (monadic)		10 ^x	10 ^x	Mathematics	Raise 10 to the power in the X-register ; Keyboard f[LOG]
12 hour clock	Setting (pgm)	OFF	CLK12	CLK12 ☐	Display	Switch on 12h time display (Format : HH24:MM ; HH:MMam/pm ; Info : SBI is shown if flag SBtime is SET)

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1st eccentricity squared	Constant		Se ²		Constants	Constant # 48 Se ² sq.eccent1 = +6.69437999014 × 10 ⁻³
1st radiation constant	Constant		c ₁		Constants	Constant # 6 c ₁ c.radiatn1 = +3.741771852192758011367155555929985 × 10 ⁻¹⁶ (Unit : z)
1x2 vector to Complex number	Function (monadic)		$\vec{v}_2 \rightarrow C$	$\vec{v}_2 \rightarrow C$	Vector operations	Convert 1x2 vector to Complex number (2.0-2.5)
2 to the power x	Function (monadic)		2 ^x	2 ^x	Mathematics	Raise 2 to the power in the X-register
2's complement	Setting (pgm)	ON	2COMPL	2COMPL @	Bits and bytes	Set 2's complement mode for Long integer (ISM = 2) (Info : <w> in SBI indicates word size (menu BITSET) ; SBI <w>:2 is shown if flag SBint is SET)
24 hour clock	Setting (pgm)	ON	CLK24	CLK24 @	Display	Switch on 24h time display (Format : HH:MM ; HH:MMam/pm ; Info : SBI is shown if flag SBtime is SET)
2D vector?	Command (logical)		VECT2D?	VECT2D?	Programming	Test X is a 2D vector (test function MATR? is true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
2nd eccentricity squared	Constant		Se' ²		Constants	Constant # 49 Se' ² sq.eccent2 = +6.73949674228 × 10 ⁻³
2nd radiation constant	Constant		c ₂		Constants	Constant # 7 c ₂ c.radiatn2 = +1.438776877503933802146671601543912 × 10 ⁻² (Unit : mK)
3D vector?	Command (logical)		VECT3D?	VECT3D?	Programming	Test X is a 3D vector (test function MATR? is true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
42-compatible operations	MENU (42)		[42]	42	Compatibility	Functions and commands that are 100% compatible with the HP-42S/DM42(n) calculators (Ref : https://47calc.com/doc/Application%20Notes/AN0026_C47_R47_DL_42S_Compatibility.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_42_page_1.pdf
42BIT?	Command (42, strike)		42BIT?		Compatibility	42BIT?
42ROTXY	Command (42, strike)		42ROTXY		Compatibility	42ROTXY
47DEFLT	User Program		47DEFLT		Test programs	47DEFLT example program, available to load from PROGRAMS/47DEFLT.p47, using READP (Info : Restore typical settings on C47, R47, after HP35fun)
A	Character		A		Numeric input and characters	Character A (Fontcode : 0041 ₁₆) ; Keyboard alpha [Σ+]
a	Character		a		Characters	Character a (Fontcode : 0061 ₁₆) ; Keyboard alpha f [Σ+]
A accute	Character		Á		Characters	Character Á (Fontcode : 00C1 ₁₆ ; Info : press [▼] for á at [aintl.1]F2)
a accute	Character		á		Characters	Character á (Fontcode : 00E1 ₁₆ ; Info : press [▲] for Á at [aintl.1]F2)
A breve	Character		Â		Characters	Character Â (Fontcode : 0102 ₁₆ ; Info : press [▼] for â at [aintl.1]F3)
a breve	Character		â		Characters	Character â (Fontcode : 0103 ₁₆ ; Info : press [▲] for Â at [aintl.1]F3)
A circumflex	Character		Ã		Characters	Character Ã (Fontcode : 00C2 ₁₆ ; Info : press [▼] for ã at [aintl.1]F3)
a circumflex	Character		ã		Characters	Character ã (Fontcode : 00E2 ₁₆ ; Info : press [▲] for Ã at [aintl.1]F3)
A diariesis	Character		Ä		Characters	Character Ä (Fontcode : 00C4 ₁₆ ; Info : press [▼] for ä at [aintl.1]F5)
a diariesis	Character		ä		Characters	Character ä (Fontcode : 00E4 ₁₆ ; Info : press [▲] for Ä at [aintl.1]F5)
A grave	Character		À		Characters	Character À (Fontcode : 00C0 ₁₆ ; Info : press [▼] for à at [aintl.1]F1)
a grave	Character		à		Characters	Character à (Fontcode : 00E0 ₁₆ ; Info : press [▲] for À at [aintl.1]F1)
A macron	Character		Ā		Characters	Character Ā (Fontcode : 017F ₁₆ ; exported as 0100 ₁₆ ; Info : press [▼] for ā at [aintl.1]fF2)
a macron	Character		ā		Characters	Character ā (Fontcode : 0101 ₁₆ ; Info : press [▲] for Ā at [aintl.1]fF2)
A ogonek	Character		Ą		Characters	Character ą (Fontcode : 0104 ₁₆ ; Info : press [▼] for ą at [aintl.1]fF4)
a ogonek	Character		ą		Characters	Character ą (Fontcode : 0105 ₁₆ ; Info : press [▲] for Ą at [aintl.1]fF4)
A ring	Character		Å		Characters	Character Å (Fontcode : 00C5 ₁₆ ; Info : press [▼] for å at [aintl.1]F6)
a ring	Character		å		Characters	Character å (Fontcode : 00E5 ₁₆ ; Info : press [▲] for Å at [aintl.1]F6)
A tilde	Character		Ā		Characters	Character Ā (Fontcode : 00C3 ₁₆ ; Info : press [▼] for ā at [aintl.1]F4)
a tilde	Character		ā		Characters	Character ā (Fontcode : 00E3 ₁₆ ; Info : press [▲] for Ā at [aintl.1]F4)
A-F keys	Setting	ON	KEYA-F	KEYA-F @	Number bases	Switch on row 2 keys to enter digits A-F in #BASE Mode ; not programmable - in PEM, use flag KEYA-F (Info : Entering digits A-F switches the calculator to hexadecimal mode ; when KEYA-F is ON, the respective digit is included in the row 2 key's longpress preview cycle)
A-F keys	Flag	SET	KEYA-F		Number bases	SET for row 2 keys to enter digits A-F in #BASE Mode ; CLEAR for row 2 keys to work normally (Info : Entering digits A-F switches the calculator to hexadecimal mode ; when KEYA-F is SET, the respective digit is included in the row 2 key's longpress preview cycle)
Absolute	Function (monadic, legacy)		ABS<		Complex numbers	Legacy version of function x : Magnitude (absolute value) of Complex number (Info : function >ABS< is superseded by x on f[Sf0])
AC current	Character		Ȧ		Characters	Character Ȧ (Fontcode : 23E6 ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Access blue functions	MENU		[BLUE47]	BLUE47	Keyboard	Access all functions of the DM42-layout g-shift keyboard (blue) and a few of the f-shift keyboard (Info : Assigned to calculator function SETUP (f[0]) in layout DM42) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_BLUE47_page_1.pdf
Access DMCP menu	Command (HW)		DMCP	DMCP	System	Access DMCP menu ; hardware only ; use EXIT to return without RESET -- see https://technical.swissmicros.com/dm42/doc/dm42_user_manual.html#dmcp_sys_menu (Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator ; Ref : https://47calc.com/doc/C47/Reference/C47_DMCP_menu.pdf)
Accuracy of the integrator	Variable (real)	0	ACC	ACC	Integrator	Reserved Real variable for the accuracy of the integrator (ACC) ; set interactively from menu Tool [TI : 'ACC' :)
acre to ha	Function (monadic, linked)		acre→ha		Area conversions	Convert acre to hectare (TI : ha:)
acre _{US} to ha	Function (monadic, linked)		acre _{US} →ha		Area conversions	Convert US acre to hectare (TI : ha:)
Activate symbol input	SIM-shift		SYM (AIM)		Simulator	Activate symbol input when in Alpha Input Mode on simulator -- SYM (AIM)
Activate USB disk	Command (HW)		ActUSB	ActUSB	System	Activate USB disk without exiting to DMCP ; hardware only (Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator)
Add	Function (dyadic)		+	+	Mathematics and text functions	Add X to Y ; concatenate X and Y, including numbers, dates and times + strings and vice versa ; Keyboard [+]
Add column	Command		COL+1	M.COL+1	Matrix operations	Add column to matrix, at the right edge
Add differential curve	Setting	OFF	Δy/Δx		Plotting	Switch on adding the graphical point-to-point differential of the main graph ; not programmable - in PEM, use flag PLdiff (Info : Δ Numerical slope is displayed ; switching ON fAREA also switches ON Δy/Δx ; switching OFF Δy/Δx also switches OFF fAREA ; cannot be combined with N.VECT, VECT)
Add differential curve	Flag	CLEAR	PLdiff		Plotting	SET for adding the graphical point-to-point differential of the main graph ; CLEAR for not adding the differential curve (Info : Δ Numerical slope is displayed)
Add integral curve	Setting	OFF	ΣyΔx		Plotting	Switch on adding the graphical integral curve, calculated from the point-to-point discrete integral ; not programmable - in PEM, use flag PLIntg (Info : Vertical placement of the integral is at RMS of the graph points ; fTrapezoid integral is displayed ; cannot be combined with N.VECT, VECT)
Add integral curve	Flag	CLEAR	PLIntg		Plotting	SET for adding the graphical integral curve, calculated from the point-to-point discrete integral ; CLEAR for not adding the integral curve (Info : Vertical placement of the integral is at RMS of the graph points ; fTrapezoid integral is displayed)
Add lap time to STATS	Command	0	LAP→Σ		Stopwatch	Add lap time to STATS (statistics matrix) and reset lap timer ; subscript shows number of data points (Shortcut : [+] (STOPW active))
Add RMS curve	Setting	OFF	RMS		Plotting	Switch on adding the graphical root mean square curve, accumulated from left to right ; not programmable - in PEM, use flag PLrms (Info : ■ Root mean square RMS is displayed ; cannot be combined with N.VECT, VECT)
Add RMS curve	Flag	CLEAR	PLrms		Plotting	SET for adding the graphical root mean square curve, accumulated from left to right ; CLEAR for not adding the RMS curve (Info : ■ Root mean square RMS is displayed)
Add row	Command		ROW+1	M.ROW+1	Matrix operations	Add row to matrix, at the bottom edge
Add time to STATS	Command	0	TIM→Σ		Stopwatch	Add time to STATS (statistics matrix) ; subscript shows number of data points (Shortcut : [Σ+] (STOPW active))
Add X into register	Function (monadic)		ST0+	ST0+	Stack	Add X into register or variable ; if X is a text string, the target is converted to text string and X is concatenated (Shortcut : [ST0] - [+] ; TAM : ST0+ __ TamSto menu)
Advanced	MENU		[ADV]	ADV	RPN Calculus and plotting	Advanced functions, using RPN user programs (Ref : https://47calc.com/doc/Application%20Notes/AN0011_C47_JM_EQN_and_ADV_menu_sol_ver_integrator_updated.pdf) ; Keyboard f[8] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ADV_page_1.pdf
AE	Character		Æ		Characters	Character Æ (Fontcode : 00C5 ₁₆ ; Info : press [▼] for æ at [αintL.1]fF1)
ae	Character		æ		Characters	Character æ (Fontcode : 00E6 ₁₆ ; Info : press [▲] for Æ at [αintL.1]fF1)
All digits notation	Setting (pgm)	3	ALL	ALL ₃ ⊗	Display	Set numeric display mode to ALL digits notation ; display all digits as far as possible with maximum nn decimal zeros (NDEC = nn = 0-19 ; DF = 0) (TAM : ALL __ TamNonReg menu ; Info : this setting applies to Real numbers and Complex numbers)

FullName	Type	Default	Label	Catalog	Category	Extended description
All variables	MENU (ASM)		[ALL]	ALLVARS	Catalog	Auto-generated catalog of all variables (Info : Matrix variables STATS and HISTO are also included in this menu, if created) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ALLVARS_page_1.pdf
Allocate local registers	Command (PEM)		LocR	LocR	Programming	Allocate nn (0-99) local registers and 32 local flags (0-31) ; available in the current routine (TAM : LocR __ TamNonReg menu ; Info : LocR nn (nn > 0) allocates local registers 00..nn-1 and local flags 00..31, LocR 00 allocates only the local flags)
AllOps	User Program		AllOps		Test programs	AllOps test program, available to load from PROGRAMS/ALLPGMS/AllOps.p47, using READP (after unzipping resources/testPgms.zip)
Almost equal	Character		≈		Characters	Character ≈ (Fontcode : 2248 ₁₆)
ALPHA	Character		A		Characters	Character A (Fontcode : 0391 ₁₆ ; Info : press [▼] for α at [α...ω.1]F1)
alpha	Character		α		Characters	Character α (Shortcut : alpha g[XEQ] ; Info : Fontcode : 03B1 ₁₆ ; press [▲] for A at [A...Ω.1]F1)
alpha button	Symbol		α		Trailing input	Special alpha button on [TamLocalLabel.1]F3 to enter a local label name for LBL, GTO or XEQ (TAM : LBL, GTO or XEQ :- TamAlpha menu ; the label will be entered as :<label>:)
Alpha capslock	Setting	OFF	CAPS		Text input	Switch on alpha capslock ; not programmable (Shortcut : alpha f[▲] / alpha f[▼] ; Info : sets initial case of menu A...Ω/α...ω and αINTL/αintl; toggling alpha capslock clears Numlock)
Alpha capslock	Flag (system)	CLEAR	αCAP		Text input	SET for alpha capslock ; CLEAR for alpha capslock inactive
Alpha Entry	Flag	CLEAR	ALP.IN		Text input	SET for alpha entry ; CLEAR for alpha entry inactive
Alpha functions	MENU		[α.FN]	α.FN	Text functions	Alpha (text string) functions ; Keyboard g[2] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alpha-FN_page_1.pdf
Alpha graphics	Command (PEM)		AGRAPH	AGRAPH	Programming	Show a 64 column pattern according to variable GRAMOD (OR: 0 ; SET: 1 ; OFF: 2 ; XOR: 3) ; this command will be redesigned and should not be used in programming! (TAM : AGRAPH __ Tam menu)
Alpha input	MENU (item)		[α]	ALPHA	Text input	Open alpha menu to enter, edit and clear alpha input ; when TAM is active, open menu TamAlpha (Shortcut : longpress [XEQ] (even when M.14 is ON) ; Info : Alpha Input Mode is opened in UPPERCASE ; menu CAT [ALPHA] is available on keyboard alpha f[+] ; alpha g-shift characters can also be reached from alpha longpress keyboard) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alpha_page_1.pdf
Alpha input	MENU		[ALPHA]	ALPHA	Text input	Alpha menu to enter, edit and clear alpha input (Shortcut : alpha triple [f/g] (because HOME ⁸ is SET ; not available in TamAlpha) ; alpha longer [f/g] (because HOME ⁸ is SET) ; Info : Alpha Input Mode is opened in UPPERCASE ; menu CAT [ALPHA] is available on keyboard alpha f[+] ; alpha g-shift characters can also be reached from alpha longpress keyboard) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ALPHA__page_1.pdf
Alpha Input Mode	Flag	CLEAR	ALPHA		Text input	SET for alpha input mode ; CLEAR for alpha input mode inactive
Alpha Integer Part	Command		αIP	αIP	Text functions	Append integer part of X to text string in register or variable (TAM : αIP __ Tam menu ; Info : if the register or variable does not contain a text string, αIP will first convert it to text string)
Alpha international	MENU		[αINTL]	αINTL	Characters	Uppercase international characters (Info : Lowercase menu via [▼] ; single character selection) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alphaINTL_page_1.pdf
alpha international	MENU		[αintl]	αintl	Characters	Lowercase international characters (Info : Uppercase menu via [▲] ; single character selection) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alphaintl-lower_page_1.pdf
Alpha left	Command		αLEFT	αLEFT	Text functions	Left X characters of text string in register or variable ; X is dropped (TAM : αLEFT __ Tam menu)
Alpha length	Command		αLENG	αLENG	Text functions	Get length of text string in register or variable (TAM : αLENG __ Tam menu)
Alpha lock downwards	Alpha-shift		CASE DN		Text input	Move down alpha lock from N to A to a (Shortcut : alpha f[▼] ; Info : sets initial case of menu A...Ω/α...ω and αINTL/αintl)
Alpha lock upwards	Alpha-shift		CASE UP		Text input	Move up alpha lock from A to a to N (Shortcut : alpha f[▲] ; Info : sets initial case of menu A...Ω/α...ω and αINTL/αintl)
Alpha lowercase	Function (monadic)		αLOWER	αLOWER	Text functions	Lowercase of text string in register or variable (TAM : αLOWER __ Tam menu)
Alpha Math	MENU		[αMath]	αMath	Characters	Mathematical symbols (Info : Single character selection) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alphaMATH_page_1.pdf

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Alpha middle	Command		αMID	αMID	Text functions	Get X characters of text string, starting at position Y ; X and Y are dropped (TAM : αMID __ Tam menu)
Alpha miscellaneous	MENU		[αMisc]	αMisc	Characters	Special characters (Info : Single character selection) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alphaMisc_page_1.pdf
Alpha parse	Command (strike)		αPARSE	αPARSE	Text functions	Parse alpha input for numeric content (in development)
Alpha position	Command		αPOS	αPOS	Text functions	Get position (starting from 0) of substring, character or character code in X within text string in register or variable (TAM : αPOS __ Tam menu ; Info : for substring not found or empty text string, αPOS returns -1)
Alpha register Integer Part	Command (42)		42AIP	42AIP	Compatibility	Append integer part of X to text string in Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command (Info : If the register or variable does not contain a text string, 42AIP will first convert it to text string ; for the 42-compatible alpha functions and commands, the Alpha register (default K) is limited to 44 characters)
Alpha register length	Command (42)		42ALENG	42ALENG	Compatibility	Get length of text string in Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command
Alpha register position	Command (42)		42POSA	42POSA	Compatibility	Get position (starting from 0) of substring, character or character code in X within text string in Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command (Info : For substring not found or empty text string, 42POSA returns -1)
Alpha register to X	Function (42, monadic)		42ATOX	42ATOX	Compatibility	Convert first alpha character of text string in Alpha register (default K) to character code (hexadecimal) and remove this character ; this is a HP-42S/DM42(n) calculator compatible function (Info : For empty text string, 42ATOX returns 0 only)
Alpha reverse	Function (monadic)		αREV	αREV	Text functions	Reverse text string in register or variable (TAM : αREV __ Tam menu)
Alpha right	Command		αRIGHT	αRIGHT	Text functions	Right X characters of text string in register or variable ; X is dropped (TAM : αRIGHT __ Tam menu)
Alpha rotate left	Function (monadic)		αRL	αRL	Text functions	Rotate text string in register or variable by X characters to the left (TAM : αRL __ Tam menu ; Info : for empty text string, αRL acts as NOP)
Alpha rotate right	Function (monadic)		αRR	αRR	Text functions	Rotate text string in register or variable by X characters to the right (TAM : αRR __ Tam menu ; Info : for empty text string, αRR acts as NOP)
Alpha shift left	Function (monadic)		αSL	αSL	Text functions	Shift text string in register or variable to the left, deleting X characters (TAM : αSL __ Tam menu ; Info : for empty text string, αSL acts as NOP)
Alpha shift right	Function (monadic)		αSR	αSR	Text functions	Shift text string in register or variable to the right, deleting X characters (TAM : αSR __ Tam menu ; Info : for empty text string, αSR acts as NOP)
Alpha to X	Function (monadic)		α→x	α→x	Text functions	Convert first alpha character of text string in register or variable to character code (hexadecimal) and remove this character (TAM : α→x __ Tam menu ; Info : for empty text string, α→x returns 0 only)
alpha tonos	Character		ά		Characters	Character ά (Fontcode : 03AC ₁₆)
Alpha trim	Function (monadic)		αTRIM	αTRIM	Text functions	Trim character(s) in X from both sides of text string in register or variable ; X may contain a character or character code (TAM : αTRIM __ Tam menu)
Alpha UPPERcase	Function (monadic)		αUPPER	αUPPER	Text functions	Uppercase of text string in register or variable (TAM : αUPPER __ Tam menu)
Alpha view	Command (PEM)		AVIEW	AVIEW	Programming	View the register or variable contents (text string) in the top left part of the screen, without TI (for use in Program Entry Mode) ; if the contents include the α symbol, optionally display one or more TI's at the top, X, Y, Z line ; example: "top line = α X = α Y = α Z = " (TAM : AVIEW __ Tam menu ; Info : if αACT is SET, AVIEW will print when executed from the keyboard in MAN, NORM or TRACE ; in Program Entry Mode, αEN must be SET as well ; if αACT is CLEAR and αEN is SET, AVIEW halts execution (R/S))
ALPHA...OMEGA	MENU		[A...Ω]	A...Ω	Characters	Uppercase Greek characters (Info : Lowercase menu via [▼] ; single character selection) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Alpha-Omega_page_1.pdf
alpha...omega	MENU		[α...ω]	α...ω	Characters	Lowercase Greek characters (Info : Uppercase menu via [▲] ; single character selection) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_alpha-omega-lower_page_1.pdf
Ampersand	Character		&		Characters	Character & (Fontcode : 0026 ₁₆)
And	Character		Λ		Characters	Character Λ (Fontcode : 2227 ₁₆)
AND	Function (dyadic)		AND	AND	Bits and bytes	Bitwise AND
Angle	Character		∠		Characters	Character ∠ (Fontcode : 2220 ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Angle and angular velocity conversions	MENU		[Angle:]	Angle:	Angular/Speed conversions	Convert between units of angle or angular velocity (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons; CLEAR for <from> → <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Angle_page_1.pdf
Angle to modulus	Function (monadic)		θ→m	θ→m	Mathematics	Ellipse eccentricity angle to modulus : $m = \sin^2(\theta)$ (TI : modulus $m=k^2$:)
Angle variables	MENU		[ANGLES]	ANGLES	Catalog	Auto-generated catalog of variables of the specified datatype : Angle (1.1-1.5) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ANGLES_page_1.pdf
Angle?	Command (logical)		ANGLE?	ANGLE?	Programming	Test type of X is Angle (1.1-1.5) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Anti-clockwise vectors	Setting	OFF	VECT		Plotting	Switch on anti-clockwise vectors ; not programmable - in PEM, use flag PLvec (Info : VECT and N.VECT are linked (both cannot be ON at the same time) ; cannot be combined with RMS, ∫AREA, Δy/Δx, ΣyΔx)
Anti-clockwise vectors	Flag	CLEAR	PLvec		Plotting	SET for anti-clockwise vectors; CLEAR for anti-clockwise vectors inactive (Info : Treat coordinate pairs as vectors, anti-clockwise from the positive x-axis as reference ; PLvec and PLnvec are linked (both cannot be SET at the same time))
Apostrophe	Character		'		Characters	Character ' (Fontcode : 0027 ₁₆)
Append string to Alpha register	Command (42, PEM)		42←	42←	Compatibility	Append text string to Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command (TAM : 42← '↵ TamAlpha menu (maximum 14 characters) ; Info : for the 42-compatible alpha functions and commands, the Alpha register (default K) is limited to 44 characters ; Error 64 -- No string in alpha register -- may be raised)
Apply SIG zeros	Flag	SET	SIG0		Display	SET for applying SIG zeros; CLEAR for not applying SIG zeros (Info : 'Apply SIG zeros' means displaying zeros for the integer part and trailing zeros for the fractional part ; zeros are required for the strict interpretation of SIG as implemented in prior C47/C43 and WP34S ; if SIG0 is CLEAR, SIG may be understood as 'maximum digits' and displays the resulting value in a more commonly used way)
Apply SIG zeros	Setting (pgm)	ON	SIG0	SIG0 	Display	Switch on applying SIG zeros (Info : 'Apply SIG zeros' means displaying zeros for the integer part and trailing zeros for the fractional part ; zeros are required for the strict interpretation of SIG as implemented in prior C47/C43 and WP34S ; if SIG0 is CLEAR, SIG may be understood as 'maximum digits' and displays the resulting value in a more commonly used way)
Arc cosine	Function (monadic, legacy)		>ACOS<		Trigonometry	Legacy version of function ARCCOS : Inverse cosine (Info : Function >ACOS< is superseded by ARCCOS on f[COS])
Arc cosine	Function (monadic)		ACOS	ARCCOS	Trigonometry	Inverse cosine (Info : Returns the principal value of the inverse cosine of X ; if flag CPXRES is SET, the domain is extended beyond [-1, +1] and complex results may be returned) ; Keyboard f[COS]
Arc sine	Function (monadic)		ASIN	ARCSIN	Trigonometry	Inverse sine (Info : Returns the principal value of the inverse sine of X ; if flag CPXRES is SET, the domain is extended beyond [-1, +1] and complex results may be returned) ; Keyboard f[SIN]
Arc sine	Function (monadic, legacy)		>ASIN<		Trigonometry	Legacy version of function ARCSIN : Inverse sine (Info : Function >ASIN< is superseded by ARCSIN on f[SIN])
Arc tangent	Function (monadic)		ATAN	ARCTAN	Trigonometry	Inverse tangent (Info : Returns the principal value of the inverse tangent of X ; if flag SPCRES is SET, infinity input is allowed and the range is extended to [-90°, 90°] (inclusive)) ; Keyboard f[TAN]
Arc tangent	Function (monadic, legacy)		>ATAN<		Trigonometry	Legacy version of function ARCTAN : Inverse tangent (Info : Function >ATAN< is superseded by ARCTAN on f[TAN])
Area conversions	MENU		[Area:]	Area:	Area conversions	Convert between units of area (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons; CLEAR for <from> → <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Area_page_1.pdf
Argument (angle)	Function (monadic)		∠	∠	Complex numbers	Argument (angle) of Complex number ; Keyboard g[STO]
Arithmetic geometric mean	Function (dyadic)		AGM	AGM	Mathematics	Arithmetic geometric mean of X and Y
Arithmetic means	Command		$\bar{x}$	$\bar{x}$	Summary statistics	Arithmetic means, x and y -- see Formula_XBAR.png : https://47calc.com/doc/Images/Formula_XBAR.png (TI : $\bar{x} =$; $\bar{y} =$)
Arithmetic means, x only	Command		$\bar{x}_1$	$\bar{x}_1$	Financial	Arithmetic means, x only (TI : $\bar{x} =$)

FullName	Type	Default	Label	Catalog	Category	Extended description
Arithmetic Shift Right	Function (monadic)		ASRn	ASRn	Bits and bytes	Arithmetic Shift Right with number of bits, preserving the sign of signed integers (trailing input) (TAM : ASRn __ TamNonReg menu)
ASM active	SBI	Blank	(ASM active)		Text input	Alpha Selection Mode active
ASM search	SBI	Blank	(ASM search)		Text input	Alpha Selection Mode two letter search
Assess	MENU (item)		[ASSESS]		Plotting and curve fitting	Display graphical assessments of the selected regression curves Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ASSESS_page_1.pdf
Assign	Command		ASN	ASSIGN	Text input	Assign function, menu or character to a keyboard key or to a button in a menu ; for options including creating user defined menus, see reference page (TAM : ASSIGN α (f[XEQ]) activates "ASSIGN ' _ TamAlpha menu _ " and allows a function or command to be spelled, to assign it to a key or button ; Info : "ASSIGN _ _ " indicates that a key or button can be pressed to assign it to another button or key ; use button ASN ([ALPHA.1] fF4) for character assignments in Alpha Input Mode ; this button is not shown in Program Entry Mode ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard f [1]
Asterisk	Character		*		Characters	Character * (Fontcode : 002A ₁₆)
Asymptotically equal to	Character		≈		Characters	Character ≈ (Fontcode : 2243 ₁₆)
At	Character		@		Characters	Character @ (Fontcode : 0040 ₁₆)
atm to Pa	Function (monadic, linked)		atm→Pa		Pressure conversions	Convert atmosphere to Pascal (TI : Pa:)
Atomic mass constant	Constant		m _u		Constants	Constant # 31 m _u mass.atom = +1.6605390689 × 10 ⁻²⁷ (Unit : kg)
au to m	Function (monadic, linked)		au→m		Distance conversions	Convert astronomical unit to metre (TI : m:)
Audio	MENU		[AUDIO]	AUDIO	Input-Output	Audio commands Docs: https://47calc.com/doc/C47/Menus/C47_Menu_AUDIO_page_1.pdf
Auto execute program	Flag	CLEAR	AUTXEQ		Programming	SET for auto execute program; CLEAR for auto execute program inactive (Info : Automatically starts program when calculator turns on)
Automatic shutdown	Flag	SET	AUTOFF		System	SET for automatic shutdown; CLEAR for automatic shutdown inactive (Info : Automatic shutdown delay is 10 m)
Automatic Stack Lift	Flag (system)	SET	ASLIFT		Stack	SET for automatic stack lift; CLEAR for automatic stack lift inactive (Info : SBI is SIM only)
Autoscaling to show x-axis	Setting	OFF	X.AXIS		Plotting	Switch on autoscaling to show x-axis ; not programmable - in PEM, use flag PLx.ax (Info : axis 0.0 or x-axis y=0 or y-axis x=0 is displayed)
Autoscaling to show x-axis	Flag	CLEAR	PLx.ax		Plotting	SET for autoscaling to show x-axis; CLEAR for not autoscaling to show x-axis
Autoscaling to show y-axis	Setting	OFF	Y.AXIS		Plotting	Switch on autoscaling to show y-axis ; not programmable - in PEM, use flag PLy.ax (Info : axis 0.0 or x-axis y=0 or y-axis x=0 is displayed)
Autoscaling to show y-axis	Flag	CLEAR	PLY.ax		Plotting	SET for autoscaling to show y-axis; CLEAR for not autoscaling to show y-axis
Avogadro's number	Constant		N _A		Constants	Constant # 36 N _A nr.avogadro = +6.02214076 × 10 ²³ (Unit : /mol)
B	Character		B		Numeric input and characters	Character B (Fontcode : 0042 ₁₆) ; Keyboard alpha [1/x]
b	Character		b		Characters	Character b (Fontcode : 0062 ₁₆) ; Keyboard alpha f [1/x]
Back	Command (PEM)		BACK	BACK	Programming	Jumps back n steps in program (TAM : BACK __ TamNonReg menu)
Back slash	Character		\		Characters	Character \ (Fontcode : 005C ₁₆)
Backbone exponent	Constant		ξ _B		Constants	Constant # 80 ξ _B exp.bbone = +3.566668367128895828373073810012663 × 10 ⁻¹ -- see https://en.wikipedia.org/wiki/Silver_ratio
Backspace	Command (nonpgm)		←		Cleanup	Backspace : clear input when in Numeric Input Mode ; when not in NIM, executes DROPx ; CLX depending on whether flag ←DROP is SET or CLEAR (default CLEAR) (Info : To assign ← to a key or button, use ASN (f[1]) and spell the name as 'BKSPC' ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard [←]
Backstep	Command (nonpgm)		BST	BST	Programming	Backstep (Shortcut : [▲])
Bairsto	User Program		Bairsto		Test programs	Bairsto test program, available to load from PROGRAMS/ALLPGMS/Bairsto.p47, using READP (after unzipping resources/testPgms.zip)
Balance	Command		BAL	BAL	Financial	Outstanding loan balance immediately after payment P2 is applied (TI : Balance remaining =)
Banana to in	Function (monadic, linked)		Banana→in		Distance conversions	Convert Banana length to inch (TI : in:)
Banana to mm	Function (monadic, linked)		Banana→mm		Distance conversions	Convert Banana length to millimetre (TI : mm:)
Bar	Symbol				Mathematics and characters	Open or close absolute value (Shortcut : alpha g [ST0] ; Info : Fontcode : 007C ₁₆)
bar to Pa	Function (monadic, linked)		bar→Pa		Pressure conversions	Convert bar to Pascal (TI : Pa:)
barrel to m ³	Function (monadic, linked)		barrel→m ³		Volume conversions	Convert barrel to cubic metre (TI : m ³ :)

FullName	Type	Default	Label	Catalog	Category	Extended description
Base number display	Setting (pgm)	0	dBASE	dBASE ₀	Number bases	Display long integer in X as base number in the T-line (base 2-52) ; exit by entering dBASE 0 (TAM : dBASE __ TamNonReg menu ; Split screen : Displaying X:Z: <value>bb ; Ref : https://47calc.com/doc/C47/Reference/C47_Base_digits.pdf)
Battery	Character				Characters	Character  (Fontcode : 242A ₁₆)
Battery half	Character				Characters	Character  (Fontcode : 2435 ₁₆)
Battery voltage	Command (HW)		BATT	BATT	System	Get battery voltage ±1 mV ; hardware only (TI : V = ; Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator)
BCD 10's complement	Setting (pgm)	OFF	10CMPL	10CMPL 0	Bits and bytes	Set BCD 10's complement display of Long integer in #BASE Mode (Info : If menu BASE is open (#BASE Mode), BCD is displayed with subscript digits and followed by subscript _{bcd})
BCD 9's complement	Setting (pgm)	OFF	9CMPL	9CMPL 0	Bits and bytes	Set BCD 9's complement display of Long integer in #BASE Mode (Info : If menu BASE is open (#BASE Mode), BCD is displayed with subscript digits and followed by subscript _{bcd})
BCD unsigned	Setting (pgm)	ON	BCDUNS	BCDUNS 0	Bits and bytes	Set BCD unsigned display of Long integer in #BASE Mode (Info : If menu BASE is open (#BASE Mode), BCD is displayed with subscript digits and followed by subscript _{bcd})
Beep	Command		BEEP	BEEP	Input-Output	Play beep sound (4 tones)
Bernoulli number (new definition)	Function (monadic)		B _n	B _n	Mathematics	Bernoulli number (new definition)
Bernoulli number (old definition)	Function (monadic)		B _n [*]	B _n [*]	Mathematics	Bernoulli number (old definition)
Bessel function of the 1st kind	Function (monadic)		J _y (x)	J _y (x)	Mathematics	Bessel function of the 1st kind and order y -- see http://en.wikipedia.org/wiki/Bessel_function
Bessel function of the 2nd kind	Command		Y _y (x)	Y _y (x)	Mathematics	Bessel function of the 2nd kind and order y -- see http://en.wikipedia.org/wiki/Bessel_function
BETA	Character		B		Characters	Character B (Fontcode : 0392 ₁₆ ; Info : press [▼] for β at [α...ω.1]F2)
beta	Character		β		Characters	Character β (Fontcode : 03B2 ₁₆ ; Info : press [▲] for B at [A...Ω.1]F2)
Binary	Setting (pgm)	OFF	BIN	BIN	Number bases	Convert X to binary and toggle binary mode ; entering digits A-F switches the calculator to hexadecimal mode ; when KEY _{A-F} is SET, the respective digit is included in the row 2 key's longpress preview cycle (Shortcut : #TAM ['/'x] (B) ; Info : values are displayed with subscript ₂)
Binary 0	Character		0		Characters	Character 0 (Fontcode : 220E ₁₆)
Binary 1	Character		1		Characters	Character 1 (Fontcode : 2027 ₁₆)
Binary coded decimal	Setting	OFF	BCD	BCD □	Bits and bytes	Switch on binary coded decimal (BCD) display of Long integer in #BASE Mode ; not programmable - in PEM, use flag BCD (Info : If menu BASE is open (#BASE Mode), BCD is displayed with subscript digits and followed by subscript _{bcd})
Binary coded decimal	Flag	CLEAR	BCD		Bits and bytes	SET for binary coded decimal (BCD) display of Long integer in #BASE Mode ; CLEAR for binary coded decimal display inactive (Info : If menu BASE is open (#BASE Mode), BCD is displayed with subscript digits and followed by subscript _{bcd})
Binary logarithm	Function (monadic)		LB	LB	Mathematics	Binary logarithm (base 2)
Binary prefixes	Setting	OFF	1024 ⁿ	1024 ⁿ □	Numeric input	Switch on binary prefixes in UNIT display mode ; not programmable - in PEM, use flag 1024 ⁿ (Info : Binary prefixes designate powers of 1024, applicable to long integers (will be indicated by Z:) and reals in UNIT display mode)
Binary prefixes	Flag	CLEAR	1024 ⁿ		Numeric input	SET for binary prefixes in UNIT display mode ; CLEAR for decimal prefixes in UNIT display mode (Info : Binary prefixes designate powers of 1024, applicable to long integers (will be indicated by Z:) and reals in UNIT display mode)
BinetV3	User Program		BinetV3		Test programs	BinetV3 example program, available to load from PROGRAMS/BinetV3.p47, using READP -- see https://forum.swissmicros.com/viewtopic.php?p=17761#p17761 (Info : Binet graphing, Jaco Mostert)
Binomial & Negative binomial distribution	MENU		[Binom:]	Binom:	Probability (int)	Binomial & Negative binomial probability distribution (discrete) (TI : RegP = p = ; RegN = n =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Binom_page_1.pdf
Binomial cdf (lower)	Function (monadic)		Binom _A	Binom _A	Probability (int)	Binomial cumulative distribution (lower tail)
Binomial cdf (upper)	Function (monadic)		Binom _A	Binom _A	Probability (int)	Binomial cumulative distribution (upper tail)
Binomial pmf	Function (monadic)		Binom _p	Binom _p	Probability (int)	Binomial probability mass function
Binomial qf (inverse)	Function (monadic)		Binom ⁻¹	Binom ⁻¹	Probability (int)	Binomial inverse cumulative distribution (quantile)
Bit clear?	Command (logical)		BC?	BC?	Bits and bytes	Test bit n is clear (TAM : BC? __ TamNonReg menu)

FullName	Type	Default	Label	Catalog	Category	Extended description
Bit set functions	MENU		[BITSET]	BITSET	Bits and bytes	Bit set functions Docs: https://47calc.com/doc/C47/Menus/C47_Menu_BITSET_page_1.pdf
Bit set?	Command (logical)		BS?	BS?	Number bases	Test bit n is set (TAM : BS? __ TamNonReg menu)
Bit shift functions	MENU (item)		[BITSHFT]	BITS+2	Bits and bytes	Activate menu BITS page 2 to access bit shift functions (Info : Previews/OPENM as BITS+2) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_BITSHFT_page_1.pdf
Bitwise functions	MENU		[BITS]	BITS	Bits and bytes	Bitwise functions ; Keyboard g[4] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_BITS_page_1.pdf
Black key	Key (black)		<empty>		Customisation	Black key : in the R47 layouts: R47v1 (⌘) and R47v3 (⌘), the [⌘] key is the hotkey that can be used for special key assignments in NORMAL mode, using menu ⌘ KEY (Info : Black key is not available in layout C47, use [Z+] instead ; note that USER mode assignment to the black key is possible as well (if available) ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf)
blob to kg	Function (monadic, linked)		blob→kg		Mass conversions	Convert blob to kilogram ; this is the same conversion as lbf-s²/in→kg on [Mass:2]gF3 (TI : kg:)
blob/in³ to kg/m³	Function (monadic, linked)		blob/in³→kg/m³		Density conversions	Convert blob per cubic inch to kilogram per cubic metre (TI : kg/m³:)
blob/in³ to lbs/in³	Function (monadic, linked)		blob/in³→lbs/in³		Density conversions	Convert blob per cubic inch to pound per cubic inch (TI : lbs/in³:)
Bohr radius	Constant		r _{Bohr}		Constants	Constant # 2 r _{Bohr} rad.bohr = +5.29177210544 × 10 ⁻¹¹ (Unit : m)
Bohr's magneton	Constant		μ _B		Constants	Constant # 66 μ _B magn.both = +9.274010065 × 10 ⁻²⁴ (Unit : J/T)
Bold font mode	Flag	CLEAR	BOLD		User interface	SET for bold font mode ; CLEAR for regular font mode
Bold font mode	Setting (pgm)	OFF	BOLD	BOLD ☐	User interface	Switch on bold font mode
Boltzmann constant	Constant		k _B		Constants	Constant # 21 k _B c.boltzmn = +1.380649 × 10 ⁻²³ (Unit : J/K)
Box markers	Setting	ON	BOX		Plotting	Switch on box markers ; not programmable - in PEM, use flag PLbox (Info : If BOX is switched ON, CROSS and PLUS are switched OFF ; LINE is switched ON when all three curve markers are deselected)
Box markers	Flag	SET	PLbox		Plotting	SET for box markers ; CLEAR for box markers inactive (Info : If PLbox is SET, PLcross and PLplus are CLEARED ; PLline is SET when all three curve markers are deselected)
brds to in	Function (monadic, linked)		brds→in		Distance conversions	Convert beardsecond to inch (TI : in:)
brds to m	Function (monadic, linked)		brds→m		Distance conversions	Convert beardsecond to metre (TI : m:)
BST	Character		Δ		Characters	Character Δ (Fontcode : 21C9 ₁₆)
Btu to J	Function (monadic, linked)		Btu→J		Energy conversions	Convert British Thermal Unit to Joule (TI : J:)
Bullet	Character		•		Characters	Character • (Fontcode : 2219 ₁₆)
Button 1	Button (black)		1		Programming	Soft button 1 for selection by KEYG or KEYX command
Button 10	Button (black)		10		Programming	Soft button 10 for selection by KEYG or KEYX command
Button 11	Button (black)		11		Programming	Soft button 11 for selection by KEYG or KEYX command
Button 12	Button (black)		12		Programming	Soft button 12 for selection by KEYG or KEYX command
Button 13	Button (black)		13		Programming	Soft button 13 for selection by KEYG or KEYX command
Button 14	Button (black)		14		Programming	Soft button 14 for selection by KEYG or KEYX command
Button 15	Button (black)		15		Programming	Soft button 15 for selection by KEYG or KEYX command
Button 16	Button (black)		16		Programming	Soft button 16 for selection by KEYG or KEYX command
Button 17	Button (black)		17		Programming	Soft button 17 for selection by KEYG or KEYX command
Button 18	Button (black)		18		Programming	Soft button 18 for selection by KEYG or KEYX command
Button 2	Button (black)		2		Programming	Soft button 2 for selection by KEYG or KEYX command
Button 3	Button (black)		3		Programming	Soft button 3 for selection by KEYG or KEYX command
Button 4	Button (black)		4		Programming	Soft button 4 for selection by KEYG or KEYX command
Button 5	Button (black)		5		Programming	Soft button 5 for selection by KEYG or KEYX command
Button 6	Button (black)		6		Programming	Soft button 6 for selection by KEYG or KEYX command
Button 7	Button (black)		7		Programming	Soft button 7 for selection by KEYG or KEYX command
Button 8	Button (black)		8		Programming	Soft button 8 for selection by KEYG or KEYX command
Button 9	Button (black)		9		Programming	Soft button 9 for selection by KEYG or KEYX command
Buzzer	Command (HW)		BUZZ	BUZZ	Input-Output	Play sound with frequency Y in Hz (0 = silent) and duration X in ms (max 2000) ; hardware only (Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator)
Byte swap	Function (monadic)		B.SWP	B.SWP	Number bases	Swap bytes
C	Character		C		Numeric input and characters	Character C (Fontcode : 0043 ₁₆) ; Keyboard alpha [√x]
c	Character		c		Characters	Character c (Fontcode : 0063 ₁₆) ; Keyboard alpha f[√x]
C accute	Character		Ć		Characters	Character Ć (Fontcode : 0106 ₁₆ ; Info : press [▼] for Ć at [aintl.1]fF8)

FullName	Type	Default	Label	Catalog	Category	Extended description
c accute	Character		Ċ		Characters	Character Ċ (Fontcode : 0107 ₁₆ ; Info : press [▲] for Ċ at [αINTL.1] fF6)
C caron	Character		Č		Characters	Character Č (Fontcode : 010C ₁₆ ; Info : press [▼] for Ċ at [αintL.1] gF1)
c caron	Character		ċ		Characters	Character ċ (Fontcode : 010D ₁₆ ; Info : press [▲] for Ċ at [αINTL.1] gF1)
C cedilla	Character		Ç		Characters	Character Ç (Fontcode : 00C7 ₁₆ ; Info : press [▼] for ç at [αintL.1] fF5)
c cedilla	Character		ç		Characters	Character ç (Fontcode : 00E7 ₁₆ ; Info : press [▲] for Ç at [αINTL.1] fF5)
C47 layout	Layout	ON	C47		Customisation	C47 keyboard layout ; selecting this layout changes base keys and deletes all keyboard assignments (KEYS.R) (TI : C47: Classic single shift (DM42/DM42n base) ; the layout is kept even on RESET)
cal to J	Function (monadic, linked)		cal→J		Energy conversions	Convert calorie to Joule (TI : J;)
Calculate result	Command		Calc f	Calc f	Equations	Calculate value of the result for the expression (TI : f =)
Calculator busy	SBI	Blank	(Busy)		Status	Calculator busy
carat to g	Function (monadic, linked)		carat→g		Mass conversions	Convert carat to gram (TI : g;)
Carriage return	Character		↵		Characters	Character ↵ (Shortcut : alpha g [ENTER] ; alpha longer [ENTER] ; EIM longer [ENTER] ; Info : Fontcode : 21B5 ₁₆)
Carry (bit)	Setting	OFF	CARRY	CARRY □	Bits and bytes	Switch on carry (bit) ; not programmable - in PEM, use flag CARRY (Info : SBI c is shown if flag SBoc is SET)
Carry (bit)	Flag	CLEAR	CARRY		Bits and bytes	SET for carry (bit) ; CLEAR for carry (bit) inactive (Info : SBI c is shown if flag SBoc is SET)
Case	Command (PEM)		CASE	CASE	Programming	Case statement, skips number of steps given by chosen variable (normally followed by number of GTO statements) (TAM : CASE ___ Tam menu)
Catalan's constant	Constant		G _c		Constants	Constant # 15 G _c c.catalan = +9.159655941772190150546035149323841 × 10 ⁻¹
Catalog	MENU		[CAT]	CATALOG	Catalog	Catalog of all items (functions, characters, programs, variables, menus) (Info : Press [EXIT] to exit catalogs) ; Keyboard f[+] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CAT_page_1.pdf
Catalog (alpha)	MENU		[CAT]	CAT _α	Catalog	Catalog of items available in Alpha Input Mode (Info : CAT [ALPHA] is available on keyboard alpha f[+]) ; Keyboard alpha f[+] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CAT_ALPHA_page_1.pdf
Catalog (equation)	MENU		[CAT]	CAT _e	Catalog	Catalog of items available in Equation Input Mode (Info : CAT [EQN] is available on keyboard f[+] in EIM) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CAT_EQN_page_1.pdf
Cauchy cdf (lower)	Function (monadic)		Cauch _α	Cauch _α	Probability (real)	Cauchy cumulative distribution (lower tail)
Cauchy cdf (upper)	Function (monadic)		Cauch _α	Cauch _α	Probability (real)	Cauchy cumulative distribution (upper tail)
Cauchy pdf	Function (monadic)		Cauch _p	Cauch _p	Probability (real)	Cauchy probability density function
Cauchy peak fit	Setting	OFF	CauchF	CauchF □	Plotting and curve fitting	Set <BestF> to include Cauchy peak curve fitting : y = [a ₀ (x + a ₁) ² + a ₂] ⁻¹ ; deselects OrthoF (Info : Adds 128 to <BestF> ; TI : L.R. selected to <BestF>.)
Cauchy qf (inverse)	Function (monadic)		Cauch ⁻¹	Cauch ⁻¹	Probability (real)	Cauchy inverse cumulative distribution (quantile)
Cauchy-Lorentz distribution	MENU		[Cauch:]	Cauch:	Probability (real)	Cauchy-Lorentz probability distribution (continuous) (TI : RegM = x ₀ = ; RegS = γ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Cauch_page_1.pdf
CB_OFF	Character		□		Characters	Character □ (Fontcode : 2610 ₁₆)
CB_ON	Character		■		Characters	Character ■ (Fontcode : 2612 ₁₆)
Ceiling	Function (monadic)		ceil	ceil	Reals	Mathematical ceiling of number
Cent	Character		¢		Characters	Character ¢ (Fontcode : 00A2 ₁₆)
Change sign	Function (monadic)		CHS	CHS	Numeric input	Change sign of number or time value in X (Info : CHS does not copy input to LASTx ; 0. CHS returns -0. provided flag SPCRES is SET) ; Keyboard [+/-]
Characteristic impedance of vacuum	Constant		Z ₀		Constants	Constant # 55 Z ₀ imped.vac = +3.76730313412 × 10 ² (Unit : Ω)
Characters	MENU		[CHARS]	CHARS	Catalog	Access to all character submenus (Mya ; A...Ω/α...ω ; αMath ; αMisc ; αINTL/αintl) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CHARS_page_1.pdf
Chebyshev polynomials (1st)	Function (dyadic)		T _n	T _n	Mathematics	Chebyshev polynomials of the 1st kind (Parameter : x = X ; n = Y)
Chebyshev polynomials (2nd)	Function (dyadic)		U _n	U _n	Mathematics	Chebyshev polynomials of the 2nd kind (Parameter : x = X ; n = Y)
Check mark	Character		✓		Characters	Character ✓ (Fontcode : 2713 ₁₆)
CHI	Character		X		Characters	Character X (Fontcode : 03A7 ₁₆ ; Info : press [▼] for χ at [α...ω.2] fF1)
chi	Character		χ		Characters	Character χ (Fontcode : 03C7 ₁₆ ; Info : press [▲] for X at [A...Ω.2] fF1)
chi to m	Function (monadic, linked)		chi→m		Distance conversions	Convert chi to metre (TI : m;)
Chi-squared cdf (lower) chi2	Function (monadic)		χ ₂ ² (x)	χ ₂ ² (x)	Probability (real)	Chi-squared cumulative distribution (lower tail)
Chi-squared cdf (upper) chi2	Function (monadic)		χ ₂ ² (x)	χ ₂ ² (x)	Probability (real)	Chi-squared cumulative distribution (upper tail)

FullName	Type	Default	Label	Catalog	Category	Extended description
Chi-squared distribution	MENU		$[\chi^2:]$	$\chi^2:$	Probability (real)	Chi-squared probability distribution (continuous) (TI : RegM = v =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Chi2_page_1.pdf
Chi-squared pdf chi2	Function (monadic)		$\chi^2_b(x)$	$\chi^2_b(x)$	Probability (real)	Chi-squared probability density function
Chi-squared qf (inverse)	Function (monadic)		$(\chi^2)^{-1}$	$(\chi^2)^{-1}$	Probability (real)	Chi-squared inverse cumulative distribution (quantile)
Chinese formatting	Setting (pgm)	OFF	CHINA	S.CHN ◊	Display	Set to Chinese regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 1949-10-01 ; Week of Year rule set: Monday.Thursday)
Classic (HP) conversions	Flag	SET	CONVHP		Unit conversions	SET for <to> $\leftarrow$ <to> unit conversion buttons; CLEAR for <from> $\rightarrow$ $\leftarrow$ <from> unit conversion buttons
Classic (HP) Rect/Polar	Setting	ON	RPHP	RPHP ▢	Complex and coordinates	Switch on x : Re ; y : Im (RECT) ; r ; θ (POLAR) in X, Y ; not programmable - in PEM, use flag RPHP (Info : RPHP OFF conforms to the way the C47 deals with complex numbers)
Classic (HP) Rect/Polar	Flag	SET	RPHP		Complex and coordinates	SET for x : Re ; y : Im (RECT) ; r ; θ (POLAR) in X, Y ; CLEAR for y : Im ; x : Re (RECT) ; θ ; r (POLAR) in X, Y (Info : RPHP CLEAR conforms to the way the C47 deals with complex numbers)
Classic (HP) style base	Setting	ON	BASEHP	BASEHP ▢	Number bases	Switch on applying number base to the whole stack ; not programmable - in PEM, use flag BASEHP (Info : Shortint values only)
Classic (HP) style base	Flag	SET	BASEHP		Number bases	SET for applying number base to the whole stack ; CLEAR for applying number base to X only (Info : Shortint values only)
Classical electron radius	Constant		r_e		Constants	Constant # 40 r_e rad.elec = $+2.8179403205 \times 10^{-15}$ (Unit : m)
Clear	MENU		[CLR]	CLR	Cleanup	Clear flags, programs, registers, stacks, variables and reset calculator ; Keyboard g[$\leftarrow$] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CLR_page_1.pdf
Clear (program) menu	Command		CLMENU	CLMENU	Cleanup	Clear the programmable menu
Clear (user) flags	Command		CLFall	CLFALL	Cleanup	Clear all user flags (numbered and lettered) (YESNO : Clear all flags? ; TI : All global user flags cleared)
Clear all menus	Command		CLMall	CLMall	Cleanup	Clear assignments to all user defined menus (YESNO : Clear all user menus? ; TI : All user menus cleared)
Clear all variables	Command		CLVall	CLVall	Cleanup	Clear all user variables ; clear matrices HISTO, STATS, Mat A, Mat B, Mat X (YESNO : Clear all user variables? ; TI : All user variables cleared)
Clear alpha	Command		CLA		Text input	In Alpha Input Mode, clear alpha input buffer ; in Equation Input Mode, clear equation (alpha) input buffer (Shortcut : alpha f[$\leftarrow$] ; alpha g[$\leftarrow$] ; alpha long [$\leftarrow$] ; EIM long [$\leftarrow$])
Clear alpha	Command		CL α	CL α	Cleanup	Clear any register or variable and initialize it with an empty text string (TAM : CL α __ Tam menu)
Clear Alpha register	Command (42)		42CLA	42CLA	Compatibility	Clear Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command
Clear bit	Function (monadic)		CB	CB	Number bases	Clear bit n (TAM : CB __ TamNonReg menu)
Clear current (program) variables	Command		CLCVAR	CLCVAR	Cleanup	Clear current program variables
Clear flag	Command		CF	CF	Programming	Clear flag (TAM : CF __ TamFlag menu)
Clear graph	Command (nonpgm)		CLGRF	CLGRF	Cleanup	Clear graph
Clear LCD	Command (42)		CLLCD	CLLCD	Cleanup	Clear the whole LCD display ; this is a 42-compatibility command
Clear LCD (screen)	Command		CLLCD _{xy}	CLLCD _{xy}	Cleanup	Clear (part of) the display, starting at X and Y (Info : Range is X in [0, 399] and Y in [0, 239] (400 x 240 display, where (0, 0) is bottom left) ; -0. is accepted as a valid negative input for line drawing)
Clear message from display	Command		CLD	CLD	Cleanup	Clear message from display
Clear modes	Command		CLRMOD	CLRMOD	Cleanup	Clear all menus, entry, fraction and base modes ; when used while plotting in Program Entry Mode, leaves a graph and carries on (Shortcut : longerpress [EXIT] ; NIM longer [EXIT] ; alpha longer [EXIT] ; PEM longest [EXIT] ; EIM longer [EXIT])
Clear number	Command		CLN		Numeric input	Clear numeric input buffer (Shortcut : NIM long [$\leftarrow$])
Clear registers	Command		CLREGS	CLREGS	Cleanup	Clear registers : general purpose 00-99 and IJK MNP QRSEFGH OUVW, local .00-.98 (if allocated) ; when stack size is 8, does not clear XYZTABCD ; when stack size is 4, does not clear XYZT, but DOES clear ABCD (YESNO : Clear registers?)
Clear registers	Command (PEM)		R-CLR	R-CLR	Programming	Clear registers, using range number in X (sss.nn means registers from sss through sss + nn - 1)

FullName	Type	Default	Label	Catalog	Category	Extended description
Clear stack	Command		CLSTK	CLSTK	Cleanup	Clear stack registers : when stack size is 8, clears XYZT ABCD ; when stack size is 4, clears XYZT ; if setting iLI is ON, the stack is filled with 0 (Long integers) ; when used while plotting, CLSTK returns to the normal screen as the stack is expected to show, implying an exit from graph and other modes (Shortcut : longpress [←])
Clear statistics	Command		CLΣ	CLΣ	Cleanup	Clear all statistics data ; delete matrices HISTO and STATS
Clear TVM variables	Command		CLTVM	CLTVM	Cleanup	Clear TVM variables
Clear X	Command		CLX	CLX	Cleanup	Clear X-register and disable automatic stack lift for next entry
Clock	MENU		[CLK]	CLK	Time functions	Clock functions, including setting date and time and julian day numbers (astronomy) (Info : Use TDISP to set time display format : 0 = full ; 1,2 = hours/minutes ; 3 = hours/minutes/seconds ; 4,5,6 = 1,2,3 decimal places for the seconds ; Ref : https://47calc.com/doc/C47/Reference/C47_Date_formats.pdf) ; Keyboard g[5] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CLK_page_1.pdf
Clockwise vectors	Setting	OFF	N.VECT		Plotting	Switch on clockwise vectors ; not programmable - in PEM, use flag PLNvec (Info : N.VECT and VECT are linked (both cannot be ON at the same time) ; cannot be combined with RMS, ∫AREA, Δy/Δx, ΣyΔx)
Clockwise vectors	Flag	CLEAR	PLNvec		Plotting	SET for clockwise vectors ; CLEAR for clockwise vectors inactive (Info : Treat coordinate pairs as navigation vectors, clockwise from the positive y-axis as reference ; PLNvec and PLVec are linked (both cannot be SET at the same time))
cm to in	Function (monadic, linked)		cm→in		Distance conversions	Convert Centimetre to inch (TI : in:)
Colon	Character		:		Characters	Character : ; in the equation editor, the colon can be used to name an expression (<name> : <expression>) (Shortcut : alpha [0] ; Fontcode : 003A ₁₆)
Colon button	Symbol		:		Trailing input	Special colon button on (e.g.) [TamLabel.1]F3 to create or specify a local named label for LBL, GT0 or XEQ (TAM : LBL, GT0 or XEQ : __ TamLocalLabel menu)
Colon equals	Character		:=		Characters	Character := (Fontcode : 2254 ₁₆)
Column or Manhattan norm	Function (monadic)		CNORM	CNORM	Matrix operations	Maximum column sum of absolute element values of a matrix in X : $\ x\ _1 = \max_j \sum_i a_{ij} $ (Info : If CNORM is selected from menu [TamNorm.1]F4, it enters $\ x\ _p$ with parameter 1 : Maximum column sum of absolute element values of a matrix in X : $\ x\ _1 = \max_j \sum_i a_{ij} $)
Column sum	Command		CSUM	CSUM	Matrix operations	Column sum of vector or matrix in X : $CSUM = \sum_i a_{ij}$
Combinations	Function (dyadic)		C _{yx}	COMB	Trigonometry	Combinations of X out of Y
Comma	Character		,		Characters	Character , (Fontcode : 002C ₁₆) ; Keyboard alpha [.]
Common logarithm	Symbol		LOG		Mathematics and characters	Common logarithm (base 10) (Shortcut : alpha g[LOG] ("LOG"))
Common logarithm	Function (monadic)		LOG	LOG	Mathematics	Common logarithm (base 10) ; Keyboard [LOG]
Complec C	Character		C		Characters	Character C (Fontcode : 2102 ₁₆)
Complement	Character		⌊		Characters	Character ⌊ (Fontcode : 2201 ₁₆)
Complementary error function	Function (monadic)		erfc	erfc	Mathematics	Complementary error function
Complete elliptic integral (1st)	Function (monadic)		K(m)	K(m)	Mathematics	Complete elliptic integral of the 1st kind -- see https://mathworld.wolfram.com/CompleteEllipticIntegraloftheFirstKind.html (Parameter : m = X)
Complete elliptic integral (2nd)	Function (monadic)		E(m)	E(m)	Mathematics	Complete elliptic integral of the 2nd kind -- see https://mathworld.wolfram.com/CompleteEllipticIntegraloftheSecondKind.html (Parameter : m = X)
Complete elliptic integral (2rd)	Function (dyadic)		Π(n,m)	Π(n,m)	Mathematics	Complete elliptic integral of the 3rd kind (Parameter : n = X ; m = Y)
Complex conjugate	Function (monadic)		conj	CONJ	Complex numbers	Complex conjugate
Complex functions	MENU		[CPX]	CPX	Complex numbers	Complex functions (Ref : https://47calc.com/doc/Application%20Notes/AN0001_C47_R47_JM_Complex_number_engineering_example.pdf) ; Keyboard g[ENTER] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CPX_page_1.pdf
Complex i	Character		i		Characters	Character i (Info : Fontcode : 2148 ₁₆)
Complex j	Flag	CLEAR	CPXj		Complex numbers	SET for displaying j as the imaginary number ; CLEAR for displaying i as the imaginary number (Info : i or j displayed in stack and on soft buttons)
Complex j	Character		j		Characters	Character j (Info : Fontcode : 2149 ₁₆)
Complex matrix or vector?	Command (logical)		Cmatx?	Cmatx?	Programming	Test type of X is Complex matrix or vector (7.n) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)

FullName	Type	Default	Label	Catalog	Category	Extended description
Complex multiplier	Setting	OFF	CPXmul	CPXmul ☐	Complex numbers	Switch on displaying Complex multiplier ; not programmable - in PEM, use flag CPXmul (Info : If OFF, trailing i or j is used ; complex multiplier is set by MULTx)
Complex multiplier	Flag	CLEAR	CPXmul		Complex numbers	SET for displaying Complex multiplier ; CLEAR for not displaying Complex multiplier (Info : If CLEAR, trailing i or j is used ; complex multiplier is set by MULTx)
Complex number	Function (dyadic)		COMPLEX	COMPLEX	Complex numbers	Convert to or from Complex number (2.0-2.5) ; Keyboard f[ENTER]
Complex number (polar notation)	Command		$i_{\odot}$	op_ $i_{\odot}$	Complex numbers	Enter complex number (polar notation) whether POLAR is set or not ; e.g. a $i_{\odot}$ b ENTER results in a $\times$ b (according to ADM) (Info : In NIM, works like CC with POLAR set ; displayed according to flag CPXj when in RECT mode)
Complex number (rectangular notation)	Command		i	op_ i	Complex numbers	Enter complex number (rectangular notation) whether RECT is set or not ; e.g. a i b ENTER results in a + b i (Info : In NIM, works like CC with RECT set ; displayed according to flag CPXj when in RECT mode) ; Keyboard g[SIN]
Complex number?	Command (logical)		$\mathbb{C}?$	$\mathbb{C}?$	Programming	Test type of X is Complex number (2.0-2.5) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Complex plot	Setting	OFF	CXPLT		Plotting	Switch on Complex plot ; not programmable - in PEM, use flag PLCxp (Info : CXPLT and IMPLT are linked (both cannot be ON at the same time))
Complex plot	Flag	CLEAR	PLCxp		Plotting	SET for Complex plot ; CLEAR for Complex plot inactive (Info : PLCxp and PLimp are linked (both cannot be SET at the same time))
Complex results	Setting	ON	CPXRES	CPXRES ☒	Complex numbers	Switch on Complex results ; not programmable - in PEM, use flag CPXRES (Info : CPXRES is auto-set when entering complex input ; SBI $\mathbb{C}$; R is shown if flag SBcr is SET)
Complex results	Flag	SET	CPXRES		Complex numbers	SET for Complex results ; CLEAR for Real results only (Info : CPXRES is auto-set when entering complex input ; SBI $\mathbb{C}$; R is shown if flag SBcr is SET)
Complex solver (stack limits)	Command (nonpgm)		cpxSlv $\overset{\times}{\underset{\times}{}}$	cpxSlv $\overset{\times}{\underset{\times}{}}$	Solver	Solve the algebraic expression (= 0) entered in the equation editor for complex roots ; interrupt by [EXIT] ; tolerance set by SDIGS ; solver estimates set from stack (Y, X) (Info : Displays current evaluated number and iteration counter ; shown if flag MONIT is SET ; TI : Result Code = ; Accuracy $\approx$; <var>prev = ; <var> = (optionally: conjugates) ; Ref : https://47calc.com/doc/C47/Reference/C47_Solver_Result_Codes.pdf)
Complex solver (variable limits)	Command (nonpgm)		cpxSlv	cpxSlv	Solver	Solve the algebraic expression (= 0) entered in the equation editor for complex roots ; interrupt by [EXIT] ; tolerance set by SDIGS ; solver estimates set from variables ($\downarrow$ Est, $\uparrow$ Est) (Info : Displays current evaluated number and iteration counter ; shown if flag MONIT is SET ; TI : Result Code = ; Accuracy $\approx$; <var>prev = ; <var> = (optionally: conjugates) ; Ref : https://47calc.com/doc/C47/Reference/C47_Solver_Result_Codes.pdf)
Complex to 1x2 vector	Function (monadic)		$\mathbb{C} \rightarrow \vec{v}_2$	$\mathbb{C} \rightarrow \vec{v}_2$	Vector operations	Convert Complex number to 1x2 vector (Info : Display depends on flag 3Dxyz, for rectangular vector : [ij] [v ₁ v ₂])
Complex to or from 1x2 vector	Function (monadic)		$\mathbb{C} \leftrightarrow \vec{v}_2$	$\mathbb{C} \leftrightarrow \vec{v}_2$	Vector operations	Convert Complex number to or from 1x2 vector (Info : Display depends on flag 3Dxyz, for rectangular vector : [ij] [v ₁ v ₂])
Complex to Real	Function (monadic)		$\mathbb{C} \rightarrow R$	$\mathbb{C} \rightarrow R$	Complex numbers	Convert Complex to Real (in POLAR, using angle tag or ADM) (TI : Im = ; Re = (RECT) ; θ = ; r = (POLAR) in X, Y)
Complex variables	MENU		[CPXS]	CPXS	Catalog	Auto-generated catalog of variables of the specified datatype : Complex number (2.0-2.5) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CPXS_page_1.pdf
Compose 1x2 vector	Function (dyadic)		$yx \rightarrow \vec{v}_2$	$yx \rightarrow \vec{v}_2$	Vector operations	Compose 1x2 vector from Y, X ; tagged angles in the input will be recognized and the appropriate coordinate tag will be applied to the vector (Info : Display depends on flag 3Dxyz, for rectangular vector : [ij] [v ₁ v ₂] ; polar vector : [r θ i] [v ₁ v ₂] ^P)

FullName	Type	Default	Label	Catalog	Category	Extended description
Compose 1x3 vector	Function (triadic)		$zyx \rightarrow \vec{v}_3$	$zyx \rightarrow \vec{v}_3$	Vector operations	Compose 1x3 vector from Z, Y, X, according to Physics or Math conventions (for spherical polar vectors) as set by flag 3DPHYS (default CLEAR) ; tagged angles in the input will be recognized and the appropriate coordinate tag will be applied to the vector (Info : Display depends on flag 3Dxyz, for rectangular vector : $[ijk] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}$; spherical vector : $[p\theta_i\phi_k]_M \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^s$; cylindrical vector : $[r\theta_i;k] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^c$; in Program Entry Mode, flag 3DPHYS determines whether $zyx \rightarrow \vec{v}_{3M}$ or $zyx \rightarrow \vec{v}_{3P}$ is stored ; notation convention is indicated by the TI subscript of the spherical polar vector : $_P$ for Physics, $_M$ for Math (determines ordering of vector elements, works on whole stack))
Compose 1x3 vector (M)	Function (triadic)		$zyx \rightarrow \vec{v}_{3M}$	$zyx \rightarrow \vec{v}_{3M}$	Vector operations	Compose 1x3 vector from Z, Y, X, according to Math conventions (for spherical polar vectors) ; tagged angles in the input will be recognized and the appropriate coordinate tag will be applied to the vector (Info : Display depends on flag 3Dxyz, for rectangular vector : $[ijk] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}$; spherical vector : $[p\theta_i\phi_k]_M \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^s$; cylindrical vector : $[r\theta_i;k] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^c$; in Program Entry Mode, $zyx \rightarrow \vec{v}_{3M}$ is stored when $zyx \rightarrow \vec{v}_3$ is entered and flag 3DPHYS is CLEAR)
Compose 1x3 vector (P)	Function (triadic)		$zyx \rightarrow \vec{v}_{3P}$	$zyx \rightarrow \vec{v}_{3P}$	Vector operations	Compose 1x3 vector from Z, Y, X, according to Physics conventions (for spherical polar vectors) ; tagged angles in the input will be recognized and the appropriate coordinate tag will be applied to the vector (Info : Display depends on flag 3Dxyz, for rectangular vector : $[ijk] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}$; spherical vector : $[p\phi_k\theta_i]_P \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^s$; cylindrical vector : $[r\theta_i;k] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^c$; in Program Entry Mode, $zyx \rightarrow \vec{v}_{3P}$ is stored when $zyx \rightarrow \vec{v}_3$ is entered and flag 3DPHYS is SET)
Compose 1x4 vector	Function (tetradic)		$tzyx \rightarrow \vec{v}_4$	$tzyx \rightarrow \vec{v}_4$	Vector operations	Compose 1x4 vector from T, Z, Y, X
Compose 3x1 matrix	Function (triadic)		$zyx \rightarrow M$	$zyx \rightarrow M$	Electrical engineering	Compose 3x1 matrix from Z, Y, X
Compose date	Function (triadic)		$zyx \rightarrow D$	$zyx \rightarrow D$	Time functions	Compose date from Z, Y, X according to CLK date format settings DD.MM.YYYY, MM/DD/YYYY or YYYY-MM-DD ; implied conversion set by YY does not apply (TI : Weekday ; Ref : https://47calc.com/doc/C47/Reference/C47_Date_formats.pdf)
Compose time	Function (monadic)		$zyx \rightarrow T$	$zyx \rightarrow T$	Time functions	Compose time from 24H hours in Z, minutes in Y, seconds in X
Compose-cut	Command		CC	CC	Complex numbers	Convert to or from Complex number (2.0-2.5) (Info : a CC b ENTER returns $a+bi$ or $a\angle b$ (using angle tag, regardless of POLAR, or ADM) ; CC returns Y : a, X : b ; also accepts 1x2 vectors as input)
Compose/decompose 1x2 vector	Function (dyadic, nonpgm)		$yx \leftrightarrow \vec{v}_2$	$yx \leftrightarrow \vec{v}_2$	Vector operations	Compose/decompose 1x2 vector from/to Y, X ; tagged angles in the input will be recognized and the appropriate coordinate tag will be applied to the vector (Info : Display depends on flag 3Dxyz, for rectangular vector : $[ij] \begin{bmatrix} v_1 & v_2 \end{bmatrix}$; rectangular elements : $[i] = ; [j] = ; [k] =$; polar vector : $[r\theta_i]_1 \begin{bmatrix} v_1 & v_2 \end{bmatrix}^p$; polar elements : $[r] = ; [\theta_i] =$)
Compose/decompose 1x3 vector	Function (triadic, nonpgm)		$zyx \leftrightarrow \vec{v}_3$	$zyx \leftrightarrow \vec{v}_3$	Vector operations	Compose/decompose 1x3 vector from/to Z, Y, X, according to Physics or Math conventions (for spherical polar vectors) as set by flag 3DPHYS (default CLEAR) ; tagged angles in the input will be recognized and the appropriate coordinate tag will be applied to the vector (Info : Display depends on flag 3Dxyz, for rectangular vector : $[ijk] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}$; rectangular elements : $[i] = ; [j] = ; [k] =$; spherical vector : $[p\theta_i\phi_k]_M \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^s$; spherical elements : $[p] = ; [\theta_i] = ; [\phi_k] =$; cylindrical vector : $[r\theta_i;k] \begin{bmatrix} v_1 & v_2 & v_3 \end{bmatrix}^c$; cylindrical elements : $[r] = ; [\theta_i] = ; [k] =$)
Compose/decompose 1x4 vector	Function (tetradic, nonpgm)		$tzyx \leftrightarrow \vec{v}_4$	$tzyx \leftrightarrow \vec{v}_4$	Vector operations	Compose/decompose 1x4 vector from/to T, Z, Y, X
Compton wavelength of the electron	Constant		λ_c		Constants	Constant # 62 λ_c wavln.elec = $+2.42631023538 \times 10^{-12}$ (Unit : m)
Compton wavelength of the neutron	Constant		λ_{cN}		Constants	Constant # 63 λ_{cN} wavln.neu = $+1.31959090382 \times 10^{-15}$ (Unit : m)
Compton wavelength of the proton	Constant		λ_{cP}		Constants	Constant # 64 λ_{cP} wavln.prot = $+1.32140985360 \times 10^{-15}$ (Unit : m)
Concatenate (bottom)	Command (strike)		ENCATB	M:ENCATB	Matrix operations	Concatenate matrices (bottom) (TAM : M.CNCTB __ Tam menu)
Concatenate (right)	Command (strike)		ENCATR	M:ENCATR	Matrix operations	Concatenate matrices (right) (TAM : M.CNCTR __ Tam menu)
Concatenate (right)	Command (strike, old)		ENCAT		Matrix operations	Old version of the command CNCATR (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use CNCATR on [MATX.1]ff6 instead)
Conductance quantum	Constant		G_0		Constants	Constant # 14 G_0 cond.quant = $+7.74809172986365064680823232308764 \times 10^{-5}$ (Unit : Ω^{-1})
Config variables	MENU		[CONFIGS]	CONFIGS	Catalog	Auto-generated catalog of variables of the specified datatype : Config (9) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CONFIGS_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Config?	Command (logical)		Config?	Config?	Programming	Test type of X is Config (9) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Configuration flags	MENU (item, nonpgm)		[CFLG]	SYS.FL	Flags	Activate menu for setting system flags using FF (Flip flag) function (Ref : https://47calc.com/doc/Application%20Notes/AN0028_C47_R47_JM_Configurability_Tour.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CFLG_page_1.pdf
Confirmation	MENU (dialog)		[YESNO]		User interface	Confirmation menu (Info : YESNO menu is typically activated by RESET on [CLR.1] gF1) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_YESNO_page_1.pdf
Constant	Command		CNST	CNST	Constants	Get value of one of the important scientific and technical constants (TAM : CNST __ TamNonReg menu (parameter 0-83) ; TI : <constant abbreviation> = <value> ; Ref : https://47calc.com/doc/C47/Reference/C47_Constants.pdf)
Constants	MENU (ASM)		[CNST]	CNST	Catalog	Important scientific and technical constants (Info : In Program Entry Mode, constants selected from the menu are stored in programs as "# ", the reference number, the label and the abbreviated name ; in the equation editor the label is simply preceded by "#"; Type characters 1-2 to search; TI : <constant abbreviation> = <value> ; Ref : https://47calc.com/doc/C47/Reference/C47_Constants.pdf) ; Keyboard g[+] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CNST_page_1.pdf
Contains as member	Character		⊃		Characters	Character ⊃ (Fontcode : 220B ₁₆)
Contour integral	Character		∮		Characters	Character ∮ (Fontcode : 222E ₁₆)
Convergence?	Command (logical)		CONVG?	CONVG?	Programming	Test convergence of X and Y using binary coded parameter for comparison mode and special numbers ; tolerance is derived from setting SDIGS (TAM : CONVG? _ TamNonReg menu ; Ref : https://47calc.com/doc/C47/Reference/C47_CONVG_param.pdf)
Convert decimal hours to time	Function (monadic)		H→T	H→T	Time functions	Convert decimal hours to hh:mm:ss hours (Info : NIM input treated as sexagesimal (hh.mmss) format ; stack input treated as decimal value ; zero time (interval) displayed as "0.1s")
Convert from symmetrical components	Function (triadic)		012→abc	SYMtoA	Electrical engineering	Convert symmetrical components a0, a1, a2 in Z, Y, X to 3-phase a, b, c in Z, Y, X
Convert sexagesimal to time	Function (monadic)		H.MS→T	H.MS→T	Time functions	Convert sexagesimal format input sequence to hh:mm:ss hours (Info : NIM input treated as sexagesimal (hh.mmss) format ; stack input treated as decimal value)
Convert to decimal hours	Function (monadic, old)		>→HR<		Reals	Old function →HR that assumed argument conforms to ADM (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use .d on g[LOG] or [CLK.1] fF5 instead)
Convert to Real number	Function (monadic)		.d	→REAL	Reals	Convert to Real number (1.0-1.5)
Convert to symmetrical components	Function (triadic)		abc→012	AtoSYM	Electrical engineering	Convert 3-phase a, b, c in Z, Y, X to symmetrical components a0, a1, a2 in Z, Y, X
Convert to xxx	Character		↔		Characters	Character ↔ (Fontcode : 21D2 ₁₆)
Convert triple RECT ↔ POLAR	Function (triadic)		3R↔3P	3R↔3P	Electrical engineering	Convert Real Z, Y, X to Complex Z, Y, X (according to flag POLAR) and vice versa (Info : Three-phase rectangular-polar conversion)
Cooking unit conversions	MENU		[Chef:]	Chef:	Cooking unit conversions	Convert between cooking units ; this menu has two pages, one for the UK (imperial) units, the other for the US (customary) units : this is determined by flag CONVus, which is SET for US units on page 1 ; CLEAR for UK units on page 1 (default CLEAR) (Info : Flag CONVus may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> → <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Chef_page_1.pdf
Copy [Σ+] assignment to USER	Command		N→U		Customisation	Copy [Σ+] NORMAL assignment to [Σ+] USER assignment and activate USER mode (Info : Does not copy →g or →f/g assignment)
Copy elements to registers	Command		V→R _{nn}	V→R _{nn}	Matrix operations	Copy elements of matrix or vector in X to ascending range of registers, starting with register nn (TAM), where numbers of registers depends on size of matrix or vector (TAM : V→R _{nn} __ TamIndirect menu ; be careful when using the range of stack registers (100-107) ; Ref : https://47calc.com/doc/C47/Reference/C47_Registers.pdf)
Copy registers	Command (PEM)		R-COPY	R-COPY	Programming	Copy registers, using range number in X (sss.nndd means registers from sss through sss + n - 1 to registers ddd through ddd + nn - 1)

FullName	Type	Default	Label	Catalog	Category	Extended description
Copy USER assignment to [Σ+]	Command		U→N		Customisation	Copy [Σ+] USER assignment to [Σ+] NORMAL assignment and deactivate USER mode
Corresponds to	Character		≡		Characters	Character ≡ (Fontcode : 2258 ₁₆)
Cosine	Function (monadic)		COS	COS	Trigonometry	Cosine ; Keyboard [COS]
Cosine	Symbol		COS		Trigonometry and characters	Cosine (Shortcut : alpha g[COS] ("COS"))
Cosine of πx	Function (monadic)		(-1) ^x	(-1) ^x	Mathematics	Cosine of πx ; for complex parameter : (-1) ^x = e ^{^(i×πxx)} = COS(πxx) + i×SIN(πxx) (Info : Esp. for non-integer x)
Create 3x3 A-Matrix	Command		[A]	op_A	Electrical engineering	Create 3x3 A-Matrix relating to Fortescue's Symmetrical Components -- see https://en.wikipedia.org/wiki/Symmetrical_components#A_matrix
Create 3x3 A(inverse)-Matrix	Command		[A ⁻¹]	op_A ⁻¹	Electrical engineering	Create 3x3 A(inverse)-Matrix relating to Fortescue's Symmetrical Components -- see https://en.wikipedia.org/wiki/Symmetrical_components#A_matrix
Cross	Character		×		Characters	Character × (Shortcut : alpha g[x] ; Info : Fontcode : 00D7 ₁₆)
Cross markers	Setting	OFF	CROSS		Plotting	Switch on cross markers ; not programmable - in PEM, use flag PLCros (Info : If CROSS is switched ON, BOX and PLUS are switched OFF ; LINE is switched ON when all three curve markers are deselected)
Cross markers	Flag	CLEAR	PLCros		Plotting	SET for cross markers ; CLEAR for cross markers inactive (Info : If PLCros is SET, Plbox and Plplus are CLEARED ; PLine is SET when all three curve markers are deselected)
Cross product (×)	Function (dyadic)		cross	CROSS	Complex numbers	Cross product of vectors in X and Y
Cube	Function (monadic)		x ³	x ³	Mathematics	Raise to power of 3
Cube root	Function (monadic)		$\sqrt[3]{x}$	$\sqrt[3]{x}$	Mathematics	Cube root of X
Cube root	Symbol		$\sqrt[3]{x}$		Mathematics and characters	Cube root (Fontcode : 221B ₁₆)
cūn to m	Function (monadic, linked)		cūn→m		Distance conversions	Convert cūn to metre (TI : m)
cup _{UK} to floz _{UK}	Function (monadic, linked)		cup _{UK} →flox _{UK}		Volume conversions	Convert UK imperial cup to UK fluid ounce (TI : floz _{UK})
cup _{UK} to mℓ	Function (monadic, linked)		cup _{UK} →mℓ		Volume conversions	Convert UK imperial cup to millilitre (TI : mℓ)
cup _{US} to floz _{US}	Function (monadic, linked)		cup _{US} →flox _{US}		Volume conversions	Convert US customary cup to US fluid ounce (TI : floz _{US})
cup _{US} to mℓ	Function (monadic, linked)		cup _{US} →mℓ		Volume conversions	Convert US customary cup to millilitre (TI : mℓ)
Cursor	Character		-		Characters	Character - (Fontcode : 2427 ₁₆)
Cursor down	Arrow		↓		Text input	Move cursor down
Cursor left	Arrow		←		Text input	Move cursor left
Cursor left by 10	Arrow		←		Text input	Move cursor left by 10 positions
Cursor right	Arrow		→		Text input	Move cursor right
Cursor right by 10	Arrow		→		Text input	Move cursor right by 10 positions
Cursor to begin	Command		↑		Text input	Jump to top left of alpha input ; Keyboard alpha [▲]
Cursor to end	Command		↓		Text input	Jump to bottom right of alpha input ; Keyboard alpha [▼]
Cursor up	Arrow		↑		Text input	Move cursor up
cwt to kg	Function (monadic, linked)		cwt→kg		Mass conversions	Convert hundredweight to kilogram (TI : kg)
Cyclic	Character		⊞		Characters	Character ⊞ (Fontcode : 267A ₁₆)
D	Character		D		Numeric input and characters	Character D (Fontcode : 0044 ₁₆) ; Keyboard alpha [LOG]
d	Character		d		Characters	Character d (Fontcode : 0064 ₁₆) ; Keyboard alpha f[LOG]
d apostrophe	Character		d'		Characters	Character d' (Fontcode : 010F ₁₆)
D caron	Character		Ď		Characters	Character Ď (Fontcode : 010E ₁₆)
D stroke	Character		Đ		Characters	Character Đ (Fontcode : 0110 ₁₆ ; Info : press [▼] for đ at [αINTL.1] gF3)
d stroke	Character		đ		Characters	Character đ (Fontcode : 0111 ₁₆ ; Info : press [▲] for Đ at [αINTL.1] gF3)
Data type	Command		TYPE	TYPE	Information	Get datatype of value in X, expressed as a numeric typecode m.nop, where m : 0-9 ; n : 0-5 or 2-16 ; o : 0-4 ; p : 0-2 (TI : <type> ; Info : note that some datatypes have subcodes ; Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Date	Command		Date→D	Date→D	Time functions	Current date (TI : Weekday (shown for dates in X, Y, Z))
Date	Character		D		Characters	Character D (Fontcode : 2145 ₁₆)
Date and time settings	MENU (item)		[DTSET]	CLK←2	Time functions	Activate menu CLK page 2 to access date and time settings (Info : Previews/OPENM as CLK←2) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DTSET_page_1.pdf
Date to Julian day number	Function (monadic)		D→J	D→J	Time functions	Convert date to Julian day number (JDN) (Info : Years are astronomical, 0 equals 1 BCE ; JDN .0 equals noon!)
Date to X	Function (monadic)		D→x	D→x	Time functions	Convert date to date input number according to CLK date format settings DD.MM.YYYY, MM/DD/YYYY or YYYY-MM-DD ; implied conversion set by YY does not apply (TI : yyyy.mmdd)

FullName	Type	Default	Label	Catalog	Category	Extended description
Date variables	MENU		[DATES]	DATES	Catalog	Auto-generated catalog of variables of the specified datatype : Date (4) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DATES_page_1.pdf
Date-time to Julian day number	Function (dyadic)		DT→J	DT→J	Time functions	Convert date, time in stack to Julian day number (JDN) (Info : Date, time can be in Y, X or X, Y ; Years are astronomical, 0 equals 1 BCE ; JDN .0 equals noon!)
Date?	Command (logical)		D?	D?	Programming	Test type of X is Date (4) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Day	Function (monadic)		DAY	DAY	Time functions	Day (of date in X)
Day of week number (ISO)	Function (monadic)		WDAY	WDAY	Time functions	Day of week number (ISO, of date in X) regardless of Week of Year rule set (TI : [ISO day] Weekday)
Day.month.year	Setting (pgm)	OFF	DMY	DMY O	Display	Switch on DD.MM.YYYY display mode (Format : DD.MM.YYYY ; Info : SBI is shown if flag SBdate is SET)
Day.month.year	Flag (system)	CLEAR	DMY		Display	SET for DD.MM.YYYY display mode ; CLEAR for DD.MM.YYYY display mode inactive (Format : DD.MM.YYYY ; Info : SBI is shown if flag SBdate is SET)
Days per year (Gregorian)	Constant		a _g		Constants	Constant # 1 a _g yr.gregor = +3.652425 × 10 ² (Unit : d)
dB to fld	Function (monadic, linked)		dB→fld		Fixed pair conversions	Convert decibel to field ratio (TI : fld:)
dB to pwr	Function (monadic, linked)		dB→pwr		Fixed pair conversions	Convert decibel to power ratio (TI : pwr:)
DC current	Character		—		Characters	Character — (Fontcode : 2393 ₁₆)
Decimal (Real) or Date	Function (monadic)		.d		Reals	Convert to decimal (Real) or date value ; untag (ADM) angle ; clear Fractions Mode, #BASE Mode ; convert angles / Times / Dates to Real ; convert NIM input to Date (according to CLK date format settings and implied conversion set by YY ; convert Complex number with zero imaginary part to Real ; when editing angles using EDIT, key .d removes the angle tag (Normal Mode and PEM) ; when editing short integers, key .d removes the base (Normal Mode and PEM) ; in PEM, .d registers as →REAL (TI : decimal h: or yyyy.mmd: ; Ref : https://47calc.com/doc/C47/Reference/C47_Date_formats.pdf) ; Keyboard g[LOG]
Decimal (short integer)	Setting (pgm)	OFF	DEC	DEC	Number bases	Convert X to decimal (short integer) and toggle decimal (short integer) mode ; entering digits A-F switches the calculator to hexadecimal mode ; when KEY _{A-F} is SET, the respective digit is included in the row 2 key's longpress preview cycle (Shortcut : #TAM [LOG] (D) ; Info : values are displayed with subscript 10)
Decompose	Function (monadic)		DECOMP	DECOMP	Reals	Convert (improper) real number fraction in X to nominator in Y, denominator in X (Info : Honours settings DENANY, DENFIX and DMX)
Decompose 1x2 vector	Function (monadic)		$\vec{v}_2 \rightarrow yx$	$\vec{v}_2 \rightarrow yx$	Vector operations	Decompose 1x2 vector to Y, X (Info : Display depends on flag 3Dxyz, for rectangular elements : [i] = ; [j] = ; polar elements : [r] = ; [θ_{ij}] =)
Decompose 1x3 vector	Function (monadic)		$\vec{v}_3 \rightarrow zyx$	$\vec{v}_3 \rightarrow zyx$	Vector operations	Decompose 1x3 vector to Z, Y, X, according to Physics or Math conventions (for spherical polar vectors) as set by flag 3DPHYS (default CLEAR) (Info : Display depends on flag 3Dxyz, for rectangular elements : [i] = ; [j] = ; [k] = ; spherical elements : [p] = ; [θ_{ij}] = ; [ϕ_k] = ; cylindrical elements : [r] = ; [θ_{ij}] = ; [k] = ; in Program Entry Mode, flag 3DPHYS determines whether $\vec{v}_3 \rightarrow zyx_M$ or $\vec{v}_3 \rightarrow zyx_P$ is stored)
Decompose 1x3 vector (M)	Function (monadic)		$\vec{v}_3 \rightarrow zyx_M$	$\vec{v}_3 \rightarrow zyx_M$	Vector operations	Decompose 1x3 vector to Z, Y, X, according to Math conventions (for spherical polar vectors) (Info : Display depends on flag 3Dxyz, for rectangular elements : [i] = ; [j] = ; [k] = ; spherical elements : [p] = ; [θ_{ij}] = ; [ϕ_k] = ; cylindrical elements : [r] = ; [θ_{ij}] = ; [k] = ; in Program Entry Mode, $\vec{v}_3 \rightarrow zyx_M$ is stored when $\vec{v}_3 \rightarrow zyx$ is entered and flag 3DPHYS is CLEAR)
Decompose 1x3 vector (P)	Function (monadic)		$\vec{v}_3 \rightarrow zyx_P$	$\vec{v}_3 \rightarrow zyx_P$	Vector operations	Decompose 1x3 vector to Z, Y, X, according to Physics conventions (for spherical polar vectors) (Info : Display depends on flag 3Dxyz, for rectangular elements : [i] = ; [j] = ; [k] = ; spherical elements : [p] = ; [θ_{ij}] = ; [ϕ_k] = ; cylindrical elements : [r] = ; [θ_{ij}] = ; [k] = ; in Program Entry Mode, $\vec{v}_3 \rightarrow zyx_P$ is stored when $\vec{v}_3 \rightarrow zyx$ is entered and flag 3DPHYS is SET)
Decompose 1x4 vector	Function (monadic)		$\vec{v}_4 \rightarrow tzyx$	$\vec{v}_4 \rightarrow tzyx$	Vector operations	Decompose 1x4 vector to T, Z, Y, X
Decompose 3x1 matrix	Function (monadic)		M→zyx	M→zyx	Electrical engineering	Decompose 3x1 matrix to Z, Y, X
Decompose date	Function (monadic)		D→zyx	D→zyx	Time functions	Decompose date to Z, Y, X according to CLK settings for date format
Decompose time	Function (monadic)		T→zyx	T→zyx	Time functions	Decompose time to 24H hours in Z, minutes in Y, seconds in X

FullName	Type	Default	Label	Catalog	Category	Extended description
Decrement	Command		DECR	DECR	Programming	Decrement range number in register or variable (ccc.ffffd, where ccc is counter, fff is final value, dd is decrement), by decrement (TAM : DECR __ Tam menu)
Decrement column index	Command	<col>	J-	J-	Matrix operations	Decrement column index J of indexed matrix ; wraps automatically ; does not put value on the stack ; menu button J- on [MATX.3] F5 displays value as subscript (only if indexed matrix exists) (TI : M[I _r J _c]=<name> [<row> <col>])
Decrement row index	Command	<row>	I-	I-	Matrix operations	Decrement row index I of indexed matrix ; wraps automatically ; does not put value on the stack ; menu button I- on [MATX.3] F2 displays value as subscript (only if indexed matrix exists) (TI : M[I _r J _c]=<name> [<row> <col>])
Decrement skip on equal	Command		DSE	DSE	Programming	Decrement skip on equal, using range number in register or variable (ccc.ffffd, where ccc is counter, fff is final value, dd is decrement) (TAM : DSE __ Tam menu)
Decrement skip on less	Command		DSL	DSL	Programming	Decrement skip on less, using range number in register or variable (ccc.ffffd, where ccc is counter, fff is final value, dd is decrement) (TAM : DSL __ Tam menu)
Decrement skip on zero	Command		DSZ	DSZ	Programming	Decrement skip on zero, using range number in register or variable (ccc.ffffd, where ccc is counter, fff is final value, dd is decrement) (TAM : DSZ __ Tam menu ; Info : time values may be used as the range number, decrement is one hour)
Default regional formatting	Setting (pgm)	ON	DEFLT	S.DFLT ♦	Display	Set to default regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 1752-09-14 ; Week of Year rule set: Monday.Thursday)
Define menu variable	Command (PEM)		MVAR	MVAR	Programming	Define menu variable in RPN program, for VarMNU, integrator, or solver ; creates variable if it does not exist (TAM : MVAR __ TamVarOnly menu ; Ref : https://47calc.com/doc/C47/Reference/C47_Variable_naming.pdf)
deg to grad	Function (monadic, linked)		deg→grad		Angle conversions	Convert degree to gradian (untagged) (TI : grad:)
deg to rad	Function (monadic, linked)		deg→rad		Angle conversions	Convert degree to radian (untagged) (TI : rad:)
deg/s to rad/s	Function (monadic, linked)		deg/s→rad/s		Angular/Speed conversions	Convert degree per second to radian per second (TI : rad/s:)
deg/s to RPM	Function (monadic, linked)		deg/s→RPM		Angular/Speed conversions	Convert degree per second to rotation per minute (TI : RPM:)
Degree sign	Character		°		Characters	Character ° (Fontcode : 00B0 ₁₆)
Degrees-radians-gradians	Function (monadic, cyclic, nonpgm)		DRG	DRG	Angle conversions	Add ADM tag to untagged value in X, convert tagged value to degrees-radians-gradians (cyclic) (Info : Setting tag for complex X also sets POLAR mode for X according to ADM)
Delete	Command		DELETE	EQ.DEL	Cleanup	Delete equation
Delete	MENU		[DELETE]	DELETE	Cleanup	Commands for clearing and deleting (user) menus, variables, programs and backup files (Info : User menus can be defined using ASSIGN) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DELETE_page_1.pdf
Delete (current) program	Command		DELP	DELP	Cleanup	Delete current program and remove all assignments of the global labels in the program (careful!) (TAM : DELP __ TamLblOnly menu)
Delete all	Command		DELa11	DELa11	Cleanup	Delete all user created programs, user menus, user variables and their assignments ; clear all keyboard user assignments ; reset user configurable menus to defaults (YESNO : Delete all? ; TI : All user menus deleted ; All data, programs and definitions cleared)
Delete all menus	Command		DELMa11	DELMa11	Cleanup	Delete all user defined menus and their assignments (YESNO : Delete all user menus? ; TI : All user menus deleted)
Delete all programs	Command		DELPa11	DELPa11	Cleanup	Delete all user created programs and remove all assignments of all global labels used in the programs (YESNO : Delete all programs? ; TI : All user programs deleted)
Delete all variables	Command		DELVa11	DELVa11	Cleanup	Delete all user variables and their assignments ; clear matrices HIST0, STATS, Mat A, Mat B, Mat X (YESNO : Delete all user variables? ; TI : All user variables deleted)
Delete Backup	Command		DELBkup	DELBkup	Cleanup	Delete configuration backup file (LOAD, SAVE) (YESNO : Delete both backup files?)
Delete column	Command		DELC	M.DELC	Matrix operations	Delete column from matrix, at the cursor position
Delete items	MENU (item)		[DELITM]	DELITM	Cleanup	Delete user defined items (and their assignments), selected from category (programs - will also remove all assignments of the global labels in the program ; variables ; user defined menus) (Trailing : DELITM_ menu DELITM ; Info : User menus can be defined using ASSIGN) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DELITM_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Delete row	Command		DELR	M.DELR	Matrix operations	Delete row from matrix, at the cursor position
DELTA	Character		Δ		Characters	Character Δ (Shortcut : alpha g[RCL] ; Info : Fontcode : 0394 ₁₆ ; press [▼] for δ at [a...w.1]F4)
delta	Character		δ		Characters	Character δ (Fontcode : 03B4 ₁₆ ; Info : press [▲] for Δ at [A...Ω.1]F4)
Delta percent	Function (dyadic)		$\Delta\%$	$\Delta\%$	Financial	Delta percentage from Y to X, keeping Y on stack -- see Formula_DELTAPC.png : https://47calc.com/doc/Images/Formula_DELTAPC.png (TI : $\Delta\%$:) ; Keyboard g[RCL]
Delta percentage to mean	Function (monadic)		$\Delta\%\bar{x}_1$	$\Delta\%\bar{x}_1$	Financial	Delta percentage from $\bar{x}$ to x using statistics matrix (STATS) -- see Formula_DPCMEAN.png : https://47calc.com/doc/Images/Formula_DPCMEAN.png (TI : $\Delta\%$:)
Delta to Star (Wye)	Function (triadic)		$\Delta \rightarrow Y$	$\Delta \rightarrow Y$	Electrical engineering	Convert star connected impedances X, Y, Z to delta impedances X, Y, Z (TI : a : ; b : ; c :)
Delta value for derivatives	Variable (real)		δ_d	δ_d	Mathematics	Delta value for derivatives, used as the step size (Info : After a value has been entered, it is show as a subscript ; if no value is entered, or a variable ' δ_d ' has already been defined by the user, an automatic step size is determined by iteration in 16 steps, starting with 1/10 ; the step size will always be displayed as " δ ")
Denominator any	Setting	OFF	DENANY	DENANY ☐	Fractions	Switch on any denominator (up to value set interactively from menu DISP (DMX TAM variant) and from menu [INFO.3]fF5 (DMXX)) in fraction display mode ; not programmable - in PEM, use flag DENANY (Info : DENANY and DENFIX are linked (both cannot be ON at the same time ; SBI [+x] is shown if flag SBfrac is SET)
Denominator any	Flag	CLEAR	DENANY		Fractions	SET for any denominator (up to value set interactively from menu DISP (DMX TAM variant) and from menu [INFO.3]fF5 (DMXX)) in fraction display mode ; CLEAR for fixed denominator in fraction display mode (Info : DENANY and DENFIX are linked (both cannot be SET at the same time) ; SBI [+x] is shown if flag SBfrac is SET)
Denominator fixed	Setting	OFF	DENFIX	DENFIX ☐	Fractions	Switch on fixed denominator (set interactively from menu DISP (DMX TAM variant) and from menu [INFO.3]fF5 (DMXX)) in fraction display mode ; not programmable - in PEM, use flag DENFIX (Info : DENFIX and DENANY are linked (both cannot be ON at the same time ; SBI [+f] is shown if flag SBfrac is SET)
Denominator fixed	Flag	CLEAR	DENFIX		Fractions	SET for fixed denominator (set interactively from menu DISP (DMX TAM variant) and from menu [INFO.3]fF5 (DMXX)) in fraction display mode ; CLEAR for any denominator in fraction display mode (Info : DENFIX and DENANY are linked (both cannot be SET at the same time) ; SBI [+f] is shown if flag SBfrac is SET)
Determinant	Function (monadic, legacy)		Δ		Matrix operations	Legacy version of function [M] : Determinant of matrix in X (matrix must be square) (Info : Function Δ is superseded by [M] or [MATX.2]F5)
Determinant	Function (monadic)		[M]	[M]	Matrix operations	Determinant of matrix in X (matrix must be square)
Developer menu	MENU (hidden)		[DEV]		Developer	Developer menu Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DEV_page_1.pdf
DIA_OFF	Character		$\diamond$		Characters	Character $\diamond$ (Fontcode : 25C7 ₁₆)
DIA_ON	Character		$\diamond$		Characters	Character $\diamond$ (Fontcode : 25C8 ₁₆)
DIGAMMA	Character		F		Characters	Character F (Fontcode : 03DC ₁₆ ; Info : press [▼] for f at [a...w.1]F6)
digamma	Character		f		Characters	Character f (Fontcode : 03DD ₁₆ ; Info : press [▲] for F at [A...Ω.1]F6)
Digit 0	Digit		0		Numeric input	Digit 0 (Fontcode : 0030 ₁₆) ; Keyboard [0]
Digit 1	Digit		1		Numeric input	Digit 1 (Fontcode : 0031 ₁₆) ; Keyboard [1]
Digit 2	Digit		2		Numeric input	Digit 2 (Fontcode : 0032 ₁₆) ; Keyboard [2]
Digit 3	Digit		3		Numeric input	Digit 3 (Fontcode : 0033 ₁₆) ; Keyboard [3]
Digit 4	Digit		4		Numeric input	Digit 4 (Fontcode : 0034 ₁₆) ; Keyboard [4]
Digit 5	Digit		5		Numeric input	Digit 5 (Fontcode : 0035 ₁₆) ; Keyboard [5]
Digit 6	Digit		6		Numeric input	Digit 6 (Fontcode : 0036 ₁₆) ; Keyboard [6]
Digit 7	Digit		7		Numeric input	Digit 7 (Fontcode : 0037 ₁₆) ; Keyboard [7]
Digit 8	Digit		8		Numeric input	Digit 8 (Fontcode : 0038 ₁₆) ; Keyboard [8]
Digit 9	Digit		9		Numeric input	Digit 9 (Fontcode : 0039 ₁₆) ; Keyboard [9]

FullName	Type	Default	Label	Catalog	Category	Extended description
Dimension (flow)	Function (monadic)		DIM	M.DIM	Matrix operations	Set dimension of matrix (named register or variable) to Y rows and X columns ; reflows elements by row and cuts off excess elements or pads with zero elements ; creates a new matrix if necessary (TAM : M.DIM __ Tam menu ; Info : also see function DIMgr)
Dimension (grow)	Function (monadic)		DIMgr	M.DIMgr	Matrix operations	Set dimension of matrix (named register or variable) to Y rows and X columns ; cuts off rows and columns or pads with zero element rows and columns ; creates a new matrix if necessary (TAM : M.DIMgr __ Tam menu ; Info : also see function DIM)
Dimensions to modulus	Function (dyadic)		$a,b \rightarrow m$	$a,b \rightarrow m$	Mathematics	Ellipse dimensions to modulus : $m = 1-(a/b)^2$, where b is the larger axis (TI : modulus $m=k^2$:)
Discrete uniform cdf (lower)	Function (monadic)		DisU _L	DisU _L	Probability (int)	Discrete uniform cumulative distribution (lower tail)
Discrete uniform cdf (upper)	Function (monadic)		DisU _U	DisU _U	Probability (int)	Discrete uniform cumulative distribution (upper tail)
Discrete uniform distribution	MENU		[DisUni:]	DisUni:	Probability (int)	Discrete uniform probability distribution (discrete) (TI : RegM = a = ; RegN = b =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DisUni_page_1.pdf
Discrete uniform pmf	Function (monadic)		DisU _p	DisU _p	Probability (int)	Discrete uniform probability mass function
Discrete uniform qf (inverse)	Function (monadic)		DisU ⁻¹	DisU ⁻¹	Probability (int)	Discrete uniform inverse cumulative distribution (quantile)
Disk state	Command (HW)		DISK	DISK	System	Get DMCP status of the FAT disk ; hardware only (Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator)
Display Long integers as Real	Setting	OFF	dZ.0	dZ.0 □	Integers	Switch on displaying Long integers as Real ; not programmable - in PEM, use flag dZ.0 (Info : dZ.0 overrules dLrgLI ; Prefix : Z : ; radix not displayed if DSP = 0 ; larger values are displayed using scientific notation and indicated as Long integer by prefix "Z:" even if dZ.0 is CLEAR ; button shows current radix preference)
Display Long integers as Real	Flag	CLEAR	dZ.0		Integers	SET for displaying Long integers as Real ; CLEAR for not displaying Long integers as Real (Info : dZ.0 overrules dLrgLI ; Prefix : Z : ; radix not displayed if DSP = 0 ; larger values are displayed using scientific notation and indicated as Long integer by prefix "Z:" even if dZ.0 is CLEAR)
Display pixel or thin line	Command (PEM)		PIXEL	PIXEL	Programming	Display one pixel at (X, Y) or draw a thin horizontal or vertical line at the (absolute) value of one or both negative coordinates ; this is a Program Entry Mode command ; use CLLCD to clear LCD and PAUSE to pause program for number of ticks in order to view graphic (Info : Range is X in [0, 399] and Y in [0, 239] (400 x 240 display, where (0, 0) is bottom left) ; -0. is accepted as a valid negative input for line drawing)
Display point or thick line	Command (PEM)		POINT	POINT	Programming	Display 9 (3x3) pixels around (X, Y) or draw a thick horizontal or vertical line at the (absolute) value of one or both negative coordinates ; this is a Program Entry Mode command ; use CLLCD to clear LCD and PAUSE to pause program for number of ticks in order to view graphic (Info : Range is X in [0, 399] and Y in [0, 239] (400 x 240 display, where (0, 0) is bottom left) ; -0. is accepted as a valid negative input for line drawing)
Display precision	Setting (pgm)	3	DSP	DSP ₃	Display	Set display mode precision (only) ; applies to FIX, SCI, ENG, UNIT, SIG, ALL (TAM : DSP __ TamNonReg menu)
Display Programmable MENU	Command (PEM)		MENU	MENU	Programming	Display the Programmable MENU defined with KEYG and/or KEYX
Display settings	MENU		[DISP]	DISP	Display	Display settings (Info : On DISP page 3, special indicators are used : ♦ : all group settings comply, ◇ : ≥1 group settings differ ; Ref : https://47calc.com/doc/Application%20Notes/AN0028_C47_R47_JM_Configurability_To_ur.pdf) ; Keyboard f[E] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DISP_page_1.pdf
Distributions	MENU		[DISTR]	DISTR	Probability	Probability distribution functions (Split screen : Displaying <register> = <parameter> = <value> for the probability distribution submenus ; Ref : https://47calc.com/doc/C47/Reference/C47_Distr_param.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DISTR_page_1.pdf
Divide	Function (dyadic)		÷	÷	Mathematics	Divide Y by X ; Keyboard [÷]
Divide X into register	Function (monadic)		STO÷	STO÷	Stack	Divide register or variable by X (Shortcut : [STO] - [÷] ; TAM : STO÷ __ TamSto menu)
Divides	Character				Characters	Character (Fontcode : 2223 ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Divisor count function (k = 0)	Function (monadic)		σ_0	σ_0	Mathematics	Divisor count function (k = 0) using either a FACTORS matrix or Long integer as input in X
DM42 layout	Layout	OFF	DM42		Customisation	DM42 keyboard layout ; selecting this layout changes base keys and deletes all keyboard assignments (KEYS.R) (T1 : DM42: Final compatibility layout ; this layout is supported for DM42 calculators without a bezel by menu BLUE47 ; the layout is kept even on RESET)
Does not contain as member	Character		⌘		Characters	Character ⌘ (Fontcode : 220C ₁₆)
Does not divide	Character		∤		Characters	Character ∤ (Fontcode : 2224 ₁₆)
Dollar	Character		\$		Characters	Character \$ (Fontcode : 0024 ₁₆)
Dot product (·)	Function (dyadic)		dot	DOT	Complex numbers	Dot product of vectors in X and Y
Double divide	Function (triadic)		DBL÷	DBL÷	Integers	Double word length divide : (Z - least, Y - most significant digits) / (X)
Double high-reversed-9 quotation mark	Character		"		Characters	Character " (Fontcode : 201F ₁₆)
Double integral	Character		∫		Characters	Character ∫ (Fontcode : 222C ₁₆)
Double low-9 quotation mark	Character		„		Characters	Character „ (Fontcode : 201E ₁₆)
Double multiply	Function (dyadic)		DBL×	DBL×	Integers	Double word length multiply (result in Y - least and X - most significant digit)
Double remainder	Function (triadic)		DBLR	DBLR	Integers	Double word length remainder
Double tap function keys	Setting	ON	g.2Tp	g.2Tp 	User interface	Switch on double tap function keys for g-shift ; not programmable - in PEM, use flag g.2Tp (Info : Blocked for navigation FN-keys (arrows) in editors)
Double tap function keys	Flag	SET	g.2Tp		User interface	SET for double tap function keys for g-shift ; CLEAR for double tap function keys inactive (Info : Blocked for navigation FN-keys (arrows) in editors)
Down	Command		↓		Navigation	Scroll down for menus and browser screens or single step through program steps (Info : To assign ↓ to a key or button, use ASN (f[1]) and spell the name as 'DOWN' ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf ; Keyboard [▼])
Down arrow	Character		↓		Characters	Character ↓ (Fontcode : 21E3 ₁₆)
Down block arrow	Character		⬇		Characters	Character ⬇ (Fontcode : 2B63 ₁₆)
Down hollow arrow	Character		⇓		Characters	Character ⇓ (Fontcode : 21E9 ₁₆)
DP decimal separator	Character		,		Characters	Character , (Fontcode : 2429 ₁₆)
DP decimal separator	Character		.		Characters	Character . (Fontcode : 2428 ₁₆)
Draw (stack limits)	MENU (item)		[Draw _Y]	Draw _Y	Plotting	Draw graph for expression (or equation) entered in the equation editor ; X-axis limits set from stack (Y, X) and Y-axis limits by variables (↓Y, ↑Y) (Info : In Program Entry Mode, use PAUSE, SNAP or PLTFCNS to view the plot ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS ; if an equation was entered (containing "="), the left hand side is plotted) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_DrawYX_page_1.pdf
Draw (variable limits)	MENU (item)		[Draw]	Draw	Plotting	Draw graph for expression (or equation) entered in the equation editor ; X-axis limits set by variables (↓X, ↑X) and Y-axis limits by variables (↓Y, ↑Y) (Info : In Program Entry Mode, use PAUSE, SNAP or PLTFCNS to view the plot ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS ; if an equation was entered (containing "="), the left hand side is plotted) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Draw_page_1.pdf
Draw line	Setting	ON	LINE		Plotting	Switch on connecting graph points using line segments ; not programmable - in PEM, use flag PLine (Info : if LINE is switched OFF, BOX may be switched ON if necessary (when no curve markers are selected))
Draw line	Flag	SET	PLine		Plotting	SET for connecting graph points using line segments ; CLEAR for not connecting graph points using line segments (Info : If PLine is CLEARed, PLbox may be SET if necessary (when no curve markers are selected))
Drop n stack registers	Command		nDROP	NDROP	Stack	Drop bottom n stack registers (n = 1-4) (TAM : nDROP _ TamNonReg menu)
Drop n stack registers	Command (old)		>nDROP<		Stack	Old version of the command nDROP that contained a bug when used in user programs (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use nDROP on [MULTSTK.1] fF3 instead)
Drop X	Command		DROPx	DROPx	Stack	Drop X from stack (Shortcut : double [ε] (if εDROP is CLEAR -- default))
Drop X, Y, Z	Command		3DROP	3DROP	Stack	Drop X, Y, Z
Drop Y	Command		DROPy	DROPy	Stack	Drop Y from stack
Duplicate n stack registers	Command		nDUP	NDUP	Stack	Duplicate bottom n stack registers to the n stack registers above (n = 1-4) (TAM : nDUP _ TamNonReg menu)

FullName	Type	Default	Label	Catalog	Category	Extended description
Duplicate n stack registers	Command (old)		>nDUP<		Stack	Old version of the command nDUP that contained a bug when used in user programs (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use nDUP on [MULTSTK.1] fF4 instead)
Duplicate X, Y, Z to T, A, B	Command		3DUP	3DUP	Stack	Duplicate X, Y, Z to T, A, B
E	Character		E		Numeric input and characters	Character E (Fontcode : 0045 ₁₆) ; Keyboard alpha [LN]
e	Character		e		Characters	Character e (Fontcode : 0065 ₁₆) ; Keyboard alpha f [LN]
E acute	Character		É		Characters	Character É (Fontcode : 00C9 ₁₆ ; Info : press [▼] for é at [aintl.1] gF5)
e acute	Character		é		Characters	Character é (Fontcode : 00E9 ₁₆ ; Info : press [▲] for É at [aintl.1] gF5)
E breve	Character		Ê		Characters	Character Ê (Fontcode : 0114 ₁₆ ; Info : press [▼] for ê at [aintl.2] F3)
e breve	Character		ê		Characters	Character ê (Fontcode : 0115 ₁₆ ; Info : press [▲] for Ê at [aintl.2] F3)
E caron	Character		Ě		Characters	Character Ě (Fontcode : 011A ₁₆ ; Info : press [▼] for ě at [aintl.2] F6)
e caron	Character		ě		Characters	Character ě (Fontcode : 011B ₁₆ ; Info : press [▲] for Ě at [aintl.2] F6)
E circumflex	Character		Ê		Characters	Character Ê (Fontcode : 00CA ₁₆ ; Info : press [▼] for ê at [aintl.1] gF6)
e circumflex	Character		ê		Characters	Character ê (Fontcode : 00EA ₁₆ ; Info : press [▲] for Ê at [aintl.1] gF6)
E diaeresis	Character		Ë		Characters	Character Ë (Fontcode : 00CB ₁₆ ; Info : press [▼] for ë at [aintl.2] F1)
e diaeresis	Character		ë		Characters	Character ë (Fontcode : 00EB ₁₆ ; Info : press [▲] for Ë at [aintl.2] F1)
E dot	Character		Ė		Characters	Character Ė (Fontcode : 0116 ₁₆ ; Info : press [▼] for ę at [aintl.2] F4)
e dot	Character		ę		Characters	Character ę (Fontcode : 0117 ₁₆ ; Info : press [▲] for Ė at [aintl.2] F4)
E grave	Character		Ě		Characters	Character Ě (Fontcode : 00C8 ₁₆ ; Info : press [▼] for ě at [aintl.1] gF4)
e grave	Character		ě		Characters	Character ě (Fontcode : 00E8 ₁₆ ; Info : press [▲] for Ě at [aintl.1] gF4)
E macron	Character		Ė		Characters	Character Ė (Fontcode : 0112 ₁₆ ; Info : press [▼] for ę at [aintl.2] F2)
e macron	Character		ę		Characters	Character ę (Fontcode : 0113 ₁₆ ; Info : press [▲] for Ė at [aintl.2] F2)
E ogonek	Character		Ę		Characters	Character Ę (Fontcode : 0118 ₁₆ ; Info : press [▼] for ę at [aintl.2] F5)
e ogonek	Character		ę		Characters	Character ę (Fontcode : 0119 ₁₆ ; Info : press [▲] for Ę at [aintl.2] F5)
ℓ to the power x	Symbol		e ^x		Mathematics and characters	ℓ to the power x
ℓ to the power x	Function (monadic)		e ^x	e ^x	Mathematics	Raise ℓ to the power in the X-register ; Keyboard f [LN]
Earth orbit (semi major axis)	Constant		a _⊕		Constants	Constant # 4 a _⊕ orb.earth = +1.495979 × 10 ¹¹ (Unit : m)
ECA	User Program		ECA		Test programs	ECA test program, available to load from PROGRAMS/ALLPGMS/ECA.p47, using READP (after unzipping resources/testPgms.zip)
Eccentricity to modulus	Function (monadic)		k→m	k→m	Mathematics	Ellipse eccentricity to modulus : m = k ² (TI : modulus m=k ² :)
Edit equation	Command (submnv)		EDIT	EQ.EDIT	Equations	Open equation editor menu to edit equation (previous equation loaded) (Info : EIM = Equation Input Mode ; Ref : https://47calc.com/doc/C47/Reference/C47_Equation_editor.pdf)
Edit item	Command		EDIT	EDIT	User interface	Edit item in X (any data type, except Config) in Normal Mode ; edit text strings, numbers or function parameters in the current step in Program Entry Mode ; when editing angles using EDIT, key .d removes the angle tag (Normal Mode and PEM) ; when editing short integers, key .d removes the base (Normal Mode and PEM) (Shortcut : longerpress [←] ; alpha longer [←] ; PEM long [←] ; EIM longer [←] ; Info : editing of long integers is limited to two input lines (about 99 digits depening on display settings) ; also note that for new models and simulator, the full set of features is supported (Complex numbers not yet implemented), but for DM42 hardware, numbers cannot be edited)
Edit matrix	MENU (item, nonpgm)		[EDIT]	M.EDIT	Matrix operations	Open matrix editor for matrix in X (Info : CAT.MENUS M_EDIT ; MIM = Matrix Input Mode ; [▲] or [▼] to move up or down one position ; Ref : 1/x, which is a shortcut for [M] ⁻¹ , use -1 y ^x instead ; and √x, which is a shortcut for MSQRT, use 0.5 y ^x instead) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_EDIT_MATX_page_1.pdf
Edit matrix (named)	MENU (item, nonpgm)		[EDITN]	M.EDITN	Matrix operations	Open matrix editor for matrix in register or variable (TAM : M.EDITN __ Tam menu) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_EDITN_page_1.pdf
Edit X	Command		X.EDIT	X.EDIT	Text input	Edit contents of stack register X as text (Shortcut : alpha long [ENTER] ; EIM long [ENTER])
eEuler	Character		e		Characters	Character e (Shortcut : alpha f [-] ; Info : Fontcode : 2147 ₁₆)
Effective TVM annual rate	Function (monadic)		1→EFF/a	1→EFF/a	Financial	Calculate Effective TVM annual rate from the TVM annual interest rate in 1/a (variable 1%/a) -- see Formula_ITOEFF.png : https://47calc.com/doc/Images/Formulas_ITOEFF.png (TI : EFF%/a = EFF%YR = EAR =>)

FullName	Type	Default	Label	Catalog	Category	Extended description
Eigenvalues	Function (monadic)		EIGVAL	EIGVAL	Matrix operations	Eigenvalues as a 1xn vector (returned in X) and as the diagonal elements of an nxn matrix (returned in Y) ; tolerance set by SDIGS (use value of 10 ⁻¹⁶ for better performance or higher for better accuracy) (Info : Displays : i/m Tol: current/target Iter: n, where i/m is count of eigenvalues, n is iteration counter ; shown if flag MONIT is SET ; for new models and simulator, extended internal eigenvalue precision with 159-digit type integration was added, achieving 39-digit accuracy for 2x2 and 3x3 solvers, but this is not applicable to DM42 hardware)
Eigenvector	Function (monadic)		EIGVEC	EIGVEC	Matrix operations	Eigenvector of matrix in X ; tolerance set by SDIGS (use value of 10 ⁻¹⁶ for better performance or higher for better accuracy) (Info : Displays : i/m Tol: current/target Iter: n, where i/m is count of eigenvalues, n is iteration counter ; shown if flag MONIT is SET ; for new models and simulator, extended internal eigenvalue precision with 159-digit type integration was added, achieving 39-digit accuracy for 2x2 and 3x3 solvers, but this is not applicable to DM42 hardware)
Electrical engineering	MENU		[ELEC]	ELEC	Electrical engineering	Electrical engineering functions and custom programs (Ref : https://47calc.com/doc/Application%20Notes/AN0005_C47_R47_JM_ELEC.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ELEC_page_1.pdf
Electron magnetic moment	Constant		μ_e		Constants	Constant # 67 μ_e $m_{\text{magn.elec}} = -9.2847646917 \times 10^{-24}$ (Unit : J/T)
Electron magnetic moment / Bohr's magneton	Constant		μ_e/μ_B		Constants	Constant # 68 μ_e/μ_B $r_{\text{elec.bohr}} = -1.00115965218046$
Electron rest mass	Constant		m_e		Constants	Constant # 24 m_e $m_{\text{mass.elec}} = +9.1093837139 \times 10^{-31}$ (Unit : kg)
Element of	Character		e		Characters	Character e (Fontcode : 2208 ₁₆)
Elementary charge	Constant		e		Constants	Constant # 8 e $charge_{\text{elem}} = +1.602176634 \times 10^{-19}$ (Unit : As)
Ellipsis	Character		...		Characters	Character ... (Fontcode : 2026 ₁₆)
Elliptic amplitude	Function (dyadic)		am(u,m)	am(u,m)	Mathematics	Elliptic amplitude (Parameter : u = X ; m = Y ; Info : u is a Real number (1.0), not an Angle (1.1-1.5))
Elliptic cosine	Function (dyadic)		cn(u,m)	cn(u,m)	Mathematics	Elliptic cosine (Parameter : u = X ; m = Y ; Info :)
Elliptic delta amplitude	Function (dyadic)		dn(u,m)	dn(u,m)	Mathematics	Elliptic delta amplitude (Parameter : u = X ; m = Y ; Info : u is a Real number (1.0), not an Angle (1.1-1.5))
Elliptic sine	Function (dyadic)		sn(u,m)	sn(u,m)	Mathematics	Elliptic sine (Parameter : u = X ; m = Y ; Info : u is Real number (1.0), not an Angle (1.1-1.5))
Elliptical functions	MENU		[Ellipt]	ELLIPT	Mathematics	Elliptical functions (Ref : https://47calc.com/doc/Application%20Notes/AN0023_C47_R47_WGR_JM_DE_Elliptic_Inc_l_Anxi.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Ellipt_page_1.pdf
Empty set	Character		∅		Characters	Character ∅ (Fontcode : 2205 ₁₆)
End	Command (PEM)		END	END	Programming	End statement
Energy conversions	MENU		[Energy:]	Energy:	Energy conversions	Convert between units of energy (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> → ← <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Energy_page_1.pdf
Energy equivalent of m_0	Constant		$m_0 c^2$		Constants	Constant # 32 $m_0 c^2$ $energy_{\text{atom}} = +1.4924180876 \times 10^{-10}$ (Unit : J)
Engineering display large Real numbers	Setting (pgm)	OFF	ENGOVR	ENGOVR O	Display	Switch on displaying large Real numbers in engineering notation
ENgineering notation	Setting (pgm)	OFF	ENG	ENG O	Display	Set numeric display mode to engineering notation with nn+1 digits (NDEC = nn = 0-19 ; DF = 3) (TAM : ENG __ TamNonReg menu ; Info : this setting applies to Real numbers and Complex numbers)
Engineering/Scientific display large Real numbers	Flag	CLEAR	ENGOVR		Display	SET for displaying large Real numbers in engineering notation ; CLEAR for displaying large Real numbers in scientific notation
Enter	Command		ENTER	ENTER	Stack	If eRPN is SET, in Numeric Input Mode, ENTER pushes the input value onto the stack, and if CLEAR, then it also duplicates X to Y ; without input or in Program Entry Mode, ENTER always duplicates X to Y ; only if eRPN is CLEAR, automatic stack lift is disabled after ENTER (Info : Note that In Program Entry Mode, ENTER terminates numeric input without inserting an ENTER instruction (it is not necessary to separate numbers on consecutive program lines and - if eRPN is SET - ENTER would lead to unnecessary duplication of X) ; For assignments (ASN (f[1])), spell the name as 'ENTER' ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard [ENTER]
Enter exponent	Command		EEX		Numeric input	Enter exponent (decimal input, powers of 10) ; Keyboard [E]

FullName	Type	Default	Label	Catalog	Category	Extended description
Enter string into Alpha register	Command (42, PEM)		42α	42α	Compatibility	Enter text string into Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command (TAM : 42α 'α. TamAlpha menu (maximum 15 characters))
Entry RPN mode	Setting	ON	eRPN	eRPN 	Stack	Switch on interactive Entry RPN mode ; not programmable - in PEM, use flag eRPN (Info : If eRPN is ON, in Numeric Input Mode, ENTER pushes the input value onto the stack, and if OFF, then it also duplicates X to Y ; without input or in Program Entry Mode, ENTER always duplicates X to Y ; only if eRPN is OFF, automatic stack lift is disabled after ENTER ; stack size SBI (8 or 4) is displayed in normal font if eRPN is ON and inverted if OFF ; SBI 8 or 4 is shown if flag SBss is ON)
Entry RPN mode	Flag	SET	eRPN		Stack	SET for interactive Entry RPN mode ; CLEAR for interactive Entry RPN mode inactive (Info : If eRPN is SET, in Numeric Input Mode, ENTER pushes the input value onto the stack, and if CLEAR, then it also duplicates X to Y ; without input or in Program Entry Mode, ENTER always duplicates X to Y ; only if eRPN is CLEAR, automatic stack lift is disabled after ENTER ; stack size SBI (8 or 4) is displayed in normal font if eRPN is SET and inverted if CLEAR ; SBI 8 or 4 is shown if flag SBss is SET)
EPSILON	Character		E		Characters	Character E (Fontcode : 0395 ₁₆ ; Info : press  for ε at [α...ω.1]F5)
epsilon	Character		ε		Characters	Character ε (Fontcode : 03B5 ₁₆ ; Info : press  for E at [A...Ω.1]F5)
epsilon tonos	Character		é		Characters	Character é (Fontcode : 03AD ₁₆)
Equal	Symbol		=		Mathematics and characters	Equal (Info : Fontcode : 003D ₁₆)
Equation editor	MENU		[EQN]	EQN	Equations	Equation editor to enter multiple expressions (Info : EIM = Equation Input Mode ; when no expression has been entered, only button NEW is shown in this menu ; when two or more expressions have been entered, use  or  to select ; menu CAT [EQN] is available on keyboard f[+] in EIM ; Ref : https://47calc.com/doc/C47/Reference/C47_Equation_editor.pdf) ; Keyboard f[7] Docs : https://47calc.com/doc/C47/Menus/C47_Menu_EQN_page_1.pdf
erg to J	Function (monadic, linked)		erg→J		Energy conversions	Convert erg to Joule (TI : J)
Error	Command (PEM)		ERR	ERR	Programming	Raise error and show error message (TAM : ERR __ TamNonReg menu ; Ref : https://47calc.com/doc/C47/Reference/C47_Errors_and_messages.pdf)
Error function	Function (monadic)		erf	erf	Mathematics	Error function
Estimates	Character		≐		Characters	Character ≐ (Fontcode : 2259 ₁₆)
ETA	Character		H		Characters	Character H (Fontcode : 03B7 ₁₆ ; Info : press  for η at [α...ω.1]fF2)
eta	Character		η		Characters	Character η (Fontcode : 03B7 ₁₆ ; Info : press  for H at [A...Ω.1]fF2)
eta tonos	Character		ή		Characters	Character ή (Fontcode : 03AE ₁₆)
ETH	Character		ø		Characters	Character ø (Fontcode : 00D0 ₁₆)
eth	Character		ö		Characters	Character ö (Fontcode : 00F0 ₁₆)
Euclidean or Frobenius norm	Function (monadic)		ENORM	ENORM	Matrix operations	Euclidean magnitude of a vector in X or Frobenius norm of a matrix in X : $\ x\ _2 = \sqrt{\sum_i x_i ^2}$ (Info : If ENORM is selected from menu [TamNorm.1]fF5, it enters $\ x\ _p$ with parameter 2 : Euclidean magnitude of a vector in X or Frobenius norm of a matrix in X : $\ x\ _2 = \sqrt{\sum_i \sum_j a_{ij} ^2}$)
Euler-Mascheroni constant	Constant		γ _{EM}		Constants	Constant # 58 γ _{EM} c.eul.masc = +5.772156649015328606065120900824024 × 10 ⁻¹
Euler's	Constant		e		Constants	Constant # 9 e e.euler = +2.718281828459045235360287471352652
Euler's Beta function	Function (dyadic)		β(x,y)	β(x,y)	Mathematics	Euler's Beta function
Euler's formula	Function (monadic)		e ^{ix}	e ^{ix}	Mathematics	Rotate complex unit vector by X radians : e ^{ix} = cos(x) + i sin(x) (Info : i or j displayed in stack and on soft buttons)
Euler's totient function	Function (monadic)		φ _E	φ _E	Mathematics	Euler's totient function using either a FACTORS matrix or Long integer as input in X -- see https://en.wikipedia.org/wiki/Euler's_totient_function
Euro	Character		€		Characters	Character € (Fontcode : 20AC ₁₆)
European formatting	Setting (pgm)	OFF	EUROP	S.EUR 	Display	Set to European regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 15.10.1582 ; Week of Year rule set: Monday.Thursday)
eV to J	Function (monadic, linked)		eV→J		Energy conversions	Convert electronvolt to Joule (TI : J)
eV/k _B to K	Function (monadic, linked)		eV/k _B →K		Temperature conversions	Convert electronvolt/Boltzmann constant to Kelvin (TI : K)
Even?	Command (logical)		EVEN?	EVEN?	Programming	Test X is even and integer (test function INT? is true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
e ^x - 1	Function (monadic)		e ^x -1	e ^x -1	Mathematics	More accurate calculation of e ^x - 1 for x ≈ 0
Exchange real and imaginary part	Command		Re↔Im	Re↔Im	Complex numbers	Exchange real and imaginary part of Complex number

FullName	Type	Default	Label	Catalog	Category	Extended description
Exclamation mark	Symbol		!		Mathematics and characters	In edit equation, used as Factorial $x!$ or $\Gamma(x+1)$ (Shortcut : alpha f[R/S] ; Info : Fontcode : 0021 ₁₆)
Exclusive NOR	Function (dyadic)		XNOR	XNOR	Bits and bytes	Logical exclusive NOR (bitwise)
Execute	Command (PEM)		XEQ	XEQ	Programming	Execute function or program with global or local label (normal spaces can be used instead of special spaces in labels) (TAM : XEQ __ TamLabel menu ; Info : XEQ + TAM [XEQ] to enter global XEQ '. TamAlpha menu ; XEQ + button : on [TamLabel.1] F3 to enter XEQ :__ TamLocalLabel menu for easy access to local labels a-l, D-F or local named labels (additionally pressing button α on [TamLocalLabel.1] F3 or TAM [XEQ] to enter XEQ :. TamAlpha menu)) ; Keyboard [XEQ]
Execute and skip	Command (PEM)		XEQ.SKP	XEQ.SKP	Programming	Execute function or program with global or local label (normal spaces can be used instead of special spaces in labels) and skip the next instruction (intended use is after a test function, which if true, calls XEQ.SKP and jumps over the next program step, which means that step is executed only if the test function returns false) (Ref : https://47calc.com/doc/C47/Reference/C47_Skipping_program_steps.pdf)
Exit	Command		EXIT		Navigation	Exit (Info : To assign EXIT to a key or button, use ASN (f[1]) and spell the name as 'EXIT' ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard [EXIT]
Exit all	Command (PEM)		EXITall	EXITALL	Programming	Exit all menus ; return to MyMenu (Normal Mode) ; exit VarMNU (program execution)
Expanded inverse tangent	Function (dyadic)		ATAN2	ATAN2	Trigonometry	Arc tangent of Y / X
Exponent	Function (monadic)		EXPT	EXPT	Reals	Exponent of real number
exponent mark	Character		10		Characters	Character 10 (Fontcode : 247D ₁₆)
Exponent sign (AIM)	Character		<E>		Characters	Character E (displays as outline E in numeric font) (Shortcut : alpha g[E] ; Info : Fontcode : 2073 ₁₆)
Exponential	MENU		[EXP]	EXP	Mathematics	Exponential functions ; Keyboard g[E] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_EXP_page_1.pdf
Exponential cdf (lower)	Function (monadic)		Expon _L	Expon _L	Probability (real)	Exponential cumulative distribution (lower tail)
Exponential cdf (upper)	Function (monadic)		Expon _U	Expon _U	Probability (real)	Exponential cumulative distribution (upper tail)
Exponential distribution	MENU		[Expon:]	Expon:	Probability (real)	Exponential probability distribution (continuous) (TI : RegR = λ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Expon_page_1.pdf
Exponential fit	Setting	OFF	ExpF	ExpF $\square$	Plotting and curve fitting	Set <BestF> to include Exponential curve fitting : $y = a e^{(a_1x)}$; deselects OrthoF (Info : Adds 2 to <BestF> ; TI : L.R. selected to <BestF>.)
Exponential pdf	Function (monadic)		Expon _P	Expon _P	Probability (real)	Exponential probability density function
Exponential qf (inverse)	Function (monadic)		Expon ⁻¹	Expon ⁻¹	Probability (real)	Exponential inverse cumulative distribution (quantile)
Export lettered registers	Command		EXPltr	EXPltr	Input-Output	Export lettered registers A-2 to text data file (.d47) in FAT (Info : DMCP : File save dialog ("Export Register File" -- DATA/) ; TI : Data file saved)
Export n registers	Command		EXPnrg	EXPnrg	Input-Output	Export n registers starting with R00 to text data file (.d47) in FAT (TAM : EXPnrg __ TamNonReg menu ; Info : DMCP : File save dialog ("Export Register File" -- DATA/) ; TI : Data file saved)
Export program	Command		XPORTP	XPORTP	Input-Output	Export program to rich text format file (.rtf) in FAT (TAM : XPORTP __ TamLbOnly menu ; DMCP : File save dialog ("Export Program RTF" -- PROGRAMS/) ; TI : Saved)
Export register or variable	Command		EXPreg	EXPreg	Input-Output	Export register or variable to text data file (.d47) in FAT (TAM : EXPreg __ Tam menu ; Info : DMCP : File save dialog ("Export Register File" -- DATA/) ; TI : Data file saved)
Export stack	Command		EXPstk	EXPstk	Input-Output	Export stack (8 or 4 registers, depending on flag SSIZE8) to text data file (.d47) in FAT (Info : DMCP : File save dialog ("Export Register File" -- DATA/) ; TI : Data file saved)
Export XFN	Command		EXPxfnx	EXPxfnx	Input-Output	Export value of virtual compound data type in XYZ to text data file (.d47) in FAT (Info : DMCP : File save dialog ("Export Register File" -- DATA/) ; TI : Data file saved)
Extended functions	MENU		[X.FN]	X.FN	Mathematics	Extended functions (Bessel, Bernoulli, Gamma, Elliptical, Orthogonal, etcetera) (Ref : https://47calc.com/doc/C47/Reference/C47_Prime_numbers.pdf) ; Keyboard g[9] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_X-FN_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Extended functions	MENU		[XFCNS]	XFCNS	Extended accuracy	Extended accuracy functions for compounded input from three or six consecutive registers, effectively to 1000 digits for new models and simulator, but function not available on DM42 hardware ; when working from the stack, the compound result overwrites X, Y, Z, but when working from other registers, the compound result is pushed onto the stack ; Y will contain Long integer ; when menu XFCNS is open, setting HIDE is ignored (Split screen : Displaying $X \times Y + Z = \langle \text{value} \rangle$ and $T \times A + B = \langle \text{value} \rangle$ (or "Invalid register type/angle") when menu XFCNS is open (on new stack input, using ALL notation ; Info : extended accuracy functions are defined for (compound) real input and output only, or will result in NaN (Not a Number) or Error 31 -- Input data types do not match ; when menu XFCNS is open, if XYZ contains result in Virtual compound data type, SHOW displays $X : XY + Z = \langle \text{value} \rangle$ and ditto for $T : TA + B$ and for the dedicated triple register storage, e.g. R90 : FMA: (fused multiply-add) ; Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_XFCNS_page_1.pdf
F	Character		F		Numeric input and characters	Character F (Fontcode : 0046 ₁₆) ; Keyboard alpha [XEQ]
f	Character		f		Characters	Character f (Fontcode : 0066 ₁₆) ; Keyboard alpha f [XEQ]
f g layout	Layout	OFF	f g		Customisation	f g keyboard layout (R47v0) ; selecting this layout changes base keys and deletes all keyboard assignments (KEYS.R) (TI : R47v0 L.Shift is f, R.Shift is g ; the layout is kept even on RESET)
Factorial x! or $\Gamma(x+1)$	Function (monadic)		x!	x!	Mathematics	For Long integers : x! ; for Reals : $\Gamma(x+1)$ (Info : Max integer: 450 (up to 1000 digits accurate) ; max real : 2123.549 956 662 463 236 31 ; integers > max are converted to reals)
Faraday constant	Constant		F		Constants	Constant # 10 F c.faraday = +9.64853321233100184 × 10 ⁴ (Unit : As/mol)
fathom to m	Function (monadic, linked)		fathom→m		Distance conversions	Convert fathom to metre (TI : m)
Feigenbaum alpha	Constant		F _α		Constants	Constant # 11 F _α α.feigenbm = +2.502907875095892822283902873218216
Feigenbaum delta	Constant		F _δ		Constants	Constant # 12 F _δ δ.feigenbm = +4.669201609102990671853203820466202
femto	Command (nonpgm)		-f		Numeric input	Factor 10 ⁻¹⁵
fēn to m	Function (monadic, linked)		fēn→m		Distance conversions	Convert fēn to metre (TI : m)
Fibonacci number	Function (monadic)		FIB	FIB	Mathematics	Fibonacci number n, where n = X -- see https://en.wikipedia.org/wiki/Fibonacci_sequence
Fill matrix from registers	Command		R _{nn} →V	R _{nn} →V	Matrix operations	Fill matrix or vector in X from ascending range of registers starting with register nn (TAM), where numbers of registers depends on size of matrix or vector (TAM : R _{nn} →V __ TamIndirect menu ; Ref : https://47calc.com/doc/C47/Reference/C47_Registers.pdf)
Fill stack	Command		FILL	FILL	Stack	Fill stack with value in the X-register
final sigma	Character		ς		Characters	Character ς (Fontcode : 03C2 ₁₆ ; Info : press [▲] for Σ at [A...Ω.2]F3)
Financial	MENU		[FIN]	FIN	Financial	Financial calculations including time value of money (TVM) and TVM cash flow (Ref : https://47calc.com/doc/C47/Reference/C47_Formulas.pdf) ; Keyboard g[8] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FIN_page_1.pdf
Find element	Function (monadic)		FIND	M.FIND	Matrix operations	Find element X of indexed matrix, setting row index I and column indexes if found (unchanged otherwise) (Info : If used in a program, the next step after M.FIND is performed if the element is found, otherwise it is skipped)
Fine-structure constant	Constant		α _F		Constants	Constant # 56 α _F c.finestruc = +7.2973525643 × 10 ⁻³
fir to kg	Function (monadic, linked)		fir→kg		Mass conversions	Convert firkin to kilogram (TI : kg)
fir to lbs	Function (monadic, linked)		fir→lbs		Mass conversions	Convert firkin to pound (TI : lbs)
First derivative (RPN)	Command (old)		>f'(x)<		RPN Calculus and plotting	Old version of the command to numerically calculate the first derivative at X using RPN program (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use f' on [ADV.1]F6 instead)
First derivative (RPN)	Command (submnv)		f''	f''	RPN Calculus and plotting	Numerically calculate first derivative using RPN program, at value of starred MVAR variable and using step size of δ _d , as specified using the buttons in the (MVAR (delta)) menu presented (TAM : f'' __ TamLbOnly menu ; TI : δ = ; f''≈ ; Info : if no step size is entered, an automatic step size is determined by iteration in 16 steps, starting with 1/10 ; the step size will always be displayed as "δ")
First derivative [EQN]	Command		Calc f'	Calc f'	Equations	Numerically calculate first derivative for (starred) variable (TI : f' =)

FullName	Type	Default	Label	Catalog	Category	Extended description
First derivative menu [EQN]	MENU		[f']	f'	Equations	Numerically calculate first derivative using current expression, at value of starred variable and using step size of δ_d , as specified using the buttons in this menu (TI : $\delta =$; $f' \approx$; Info : if no step size is entered, an automatic step size is determined by iteration in 16 steps, starting with 1/10 ; the step size will always be displayed as "s") Docs: https://47calc.com/doc/C47/Menus/C47_Menu_f-prime_page_1.pdf
First payment number	Command	1	P1	P1 ₁	Financial	Set first payment number in the range (integer, $1 \leq P1 \leq n$) (TI : From period P1:)
Fisher's F cdf (lower)	Function (monadic)		$F_{\alpha}(x)$	$F_{\alpha}(x)$	Probability (real)	Fisher's F cumulative distribution (lower tail)
Fisher's F cdf (upper)	Function (monadic)		$F_{\alpha}(x)$	$F_{\alpha}(x)$	Probability (real)	Fisher's F cumulative distribution (upper tail)
Fisher's F distribution	MENU		[F:]	F:	Probability (real)	Fisher's F probability distribution (continuous) (TI : RegM = d ₁ = ; RegN = d ₂ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_F_page_1.pdf
Fisher's F pdf	Function (monadic)		$F_p(x)$	$F_p(x)$	Probability (real)	Fisher's F probability density function
Fisher's F qf (inverse)	Function (monadic)		$F^{-1}(p)$	$F^{-1}(p)$	Probability (real)	Fisher's F inverse cumulative distribution (quantile)
Fit model correlation	Command		r	CORR	Plotting and curve fitting	Fit model correlation
Fit model covariance	Command		cov	COV	Plotting and curve fitting	Fit model covariance
FIXed notation	Setting (pgm)	OFF	FIX	FIX O	Display	Set numeric display mode to fixed notation with nn decimals (NDEC = nn = 0-19 ; DF = 1) (TAM : FIX __ TamNonReg menu ; Info : this setting applies to Real numbers and Complex numbers)
Fixed-Scientific-Engineering	Setting (cyclic)	ALL	FSE	FSE _{ALL}	Display	Display mode cycling (FIX ; SCI ; ENG ; UNIT ; SIG ; ALL) (Info : FSE _{FIX} ; FSE _{SCI} ; FSE _{ENG} ; FSE _{UNIT} ; FSE _{SIG} ; FSE _{ALL})
Flag A	Flag (lettered)		A		Lettered flags	Flag A (104) (Info : Reached from FF [FLG.1] fF3 or FF {A})
Flag A	EasyAccess (TAM)		A		Trailing input	Easy access to Flag A (104) (Shortcut : FF {A})
Flag B	Flag (lettered)		B		Lettered flags	Flag B (105) (Info : Reached from FF [FLG.1] fF4 or FF {B})
Flag B	EasyAccess (TAM)		B		Trailing input	Easy access to Flag B (105) (Shortcut : FF {B})
Flag browser	Browser		FLGS	FLGS	Status	Browse status pages (flags 00-99, lettered flags, status overview, system flags) (Info : Press [EXIT] to exit Flag browser and browse using [▲] and [▼] ; browser STATUS in menu FLAG shows the same status pages in a different order ; Ref : https://47calc.com/doc/C47/Reference/C47_Flags_p1.pdf) ; Keyboard g[▼]
Flag C	Flag (lettered)		C		Lettered flags	Flag C (106) (Info : Reached from FF [FLG.1] fF5 or FF {C})
Flag C	EasyAccess (TAM)		C		Trailing input	Easy access to Flag C (106) (Shortcut : FF {C})
Flag clear?	Command (logical)		FC?	FC?	Programming	Test flag clear? (TAM : FC? __ TamFlag menu)
Flag clear? and clear	Command (logical)		FC?C	FC?C	Programming	Test flag clear? and clear (TAM : FC?C __ TamFlag menu)
Flag clear? and flip	Command (logical)		FC?F	FC?F	Programming	Test flag clear? and flip (TAM : FC?F __ TamFlag menu)
Flag clear? and set	Command (logical)		FC?S	FC?S	Programming	Test flag clear? and set (TAM : FC?S __ TamFlag menu)
Flag D	Flag (lettered)		D		Lettered flags	Flag D (107) (Info : Reached from FF [FLG.1] fF6 or FF {D})
Flag D	EasyAccess (TAM)		D		Trailing input	Easy access to Flag D (107) (Shortcut : FF {D})
Flag E	Flag (lettered)		E		Lettered flags	Flag E (217) (Info : Reached from FF [FLG.2] F1 or FF {E})
Flag E	EasyAccess (TAM)		E		Trailing input	Easy access to Flag E (217) (Shortcut : FF {E})
Flag F	Flag (lettered)		F		Lettered flags	Flag F (218) (Info : Reached from FF [FLG.2] F2)
Flag F	EasyAccess (TAM)		F		Trailing input	Easy access to Flag F (218)
Flag G	Flag (lettered)		G		Lettered flags	Flag G (219) (Info : Reached from FF [FLG.2] F3 or FF {G})
Flag G	EasyAccess (TAM)		G		Trailing input	Easy access to Flag G (219) (Shortcut : FF {G})
Flag H	Flag (lettered)		H		Lettered flags	Flag H (220) (Info : Reached from FF [FLG.2] F4 or FF {H})
Flag H	EasyAccess (TAM)		H		Trailing input	Easy access to Flag H (220) (Shortcut : FF {H})
Flag I	Flag (lettered)		I		Lettered flags	Flag I (109) (Info : Reached from FF [FLG.1] gF1 or FF {i})
Flag I	EasyAccess (TAM)		I		Trailing input	Easy access to Flag I (109) (Shortcut : FF {i})
Flag J	Flag (lettered)		J		Lettered flags	Flag J (110) (Info : Reached from FF [FLG.1] gF2 or FF {J})
Flag J	EasyAccess (TAM)		J		Trailing input	Easy access to Flag J (110) (Shortcut : FF {J})
Flag K	Flag (lettered)		K		Lettered flags	Flag K (111) (Info : Reached from FF [FLG.1] fF1 or FF {K})
Flag K	EasyAccess (TAM)		K		Trailing input	Easy access to Flag K (111) (Shortcut : FF {K})
Flag L	Flag (lettered)		L		Lettered flags	Flag L (108) (Info : Reached from FF [FLG.1] fF2 or FF {L})
Flag L	EasyAccess (TAM)		L		Trailing input	Easy access to Flag L (108) (Shortcut : FF {L})
Flag M	Flag (lettered)		M		Lettered flags	Flag M (211) (Info : Reached from FF [FLG.1] F1 or FF {M})
Flag M	EasyAccess (TAM)		M		Trailing input	Easy access to Flag M (211) (Shortcut : FF {M})
Flag N	Flag (lettered)		N		Lettered flags	Flag N (212) (Info : Reached from FF [FLG.1] F2 or FF {N})
Flag N	EasyAccess (TAM)		N		Trailing input	Easy access to Flag N (212) (Shortcut : FF {N})
Flag O	Flag (lettered)		O		Lettered flags	Flag O (221) (Info : Reached from FF [FLG.2] F5 or FF {O})

FullName	Type	Default	Label	Catalog	Category	Extended description
Flag 0	EasyAccess (TAM)		0		Trailing input	Easy access to Flag 0 (221) (Shortcut : FF {0})
Flag P	Flag (lettered)		P		Lettered flags	Flag P (213) (Info : Reached from FF [FLG.1] F3)
Flag P	EasyAccess (TAM)		P		Trailing input	Easy access to Flag P (213)
Flag Q	Flag (lettered)		Q		Lettered flags	Flag Q (214) (Info : Reached from FF [FLG.1] F4)
Flag Q	EasyAccess (TAM)		Q		Trailing input	Easy access to Flag Q (214)
Flag R	Flag (lettered)		R		Lettered flags	Flag R (215) (Info : Reached from FF [FLG.1] F5)
Flag R	EasyAccess (TAM)		R		Trailing input	Easy access to Flag R (215)
Flag S	Flag (lettered)		S		Lettered flags	Flag S (216) (Info : Reached from FF [FLG.1] F6)
Flag S	EasyAccess (TAM)		S		Trailing input	Easy access to Flag S (216)
Flag set?	Command (logical)		FS?	FS?	Programming	Test flag set? (TAM : FS? __ TamFlag menu)
Flag set? and clear	Command (logical)		FS?C	FS?C	Programming	Test flag set? and clear (TAM : FS?C __ TamFlag menu)
Flag set? and flip	Command (logical)		FS?F	FS?F	Programming	Test flag set? and flip (TAM : FS?F __ TamFlag menu)
Flag set? and set	Command (logical)		FS?S	FS?S	Programming	Test flag set? and set (TAM : FS?S __ TamFlag menu)
Flag T	Flag (lettered)		T		Lettered flags	Flag T (103) (Info : Reached from FF [FLG.1] gF6)
Flag T	EasyAccess (TAM)		T		Trailing input	Easy access to Flag T (103)
Flag U	Flag (lettered)		U		Lettered flags	Flag U (222) (Info : Reached from FF [FLG.2] F6)
Flag U	EasyAccess (TAM)		U		Trailing input	Easy access to Flag U (222)
Flag V	Flag (lettered)		V		Lettered flags	Flag V (223) (Info : Reached from FF [FLG.2] fF1)
Flag V	EasyAccess (TAM)		V		Trailing input	Easy access to Flag V (223)
Flag W	Flag (lettered)		W		Lettered flags	Flag W (224) (Info : Reached from FF [FLG.2] fF2)
Flag W	EasyAccess (TAM)		W		Trailing input	Easy access to Flag W (224)
Flag X	Flag (lettered)		X		Lettered flags	Flag X (100) (Info : Reached from FF [FLG.1] gF3)
Flag X	EasyAccess (TAM)		X		Trailing input	Easy access to Flag X (100)
Flag Y	Flag (lettered)		Y		Lettered flags	Flag Y (101) (Info : Reached from FF [FLG.1] gF4)
Flag Y	EasyAccess (TAM)		Y		Trailing input	Easy access to Flag Y (101)
Flag Z	Flag (lettered)		Z		Lettered flags	Flag Z (102) (Info : Reached from FF [FLG.1] gF5)
Flag Z	EasyAccess (TAM)		Z		Trailing input	Easy access to Flag Z (102)
Flags	MENU		[FLAG]	FLAG	Programming	Setting, clearing and testing flags ; Keyboard f[6] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FLAG_page_1.pdf
Flattening factor	Constant		Sf ⁻¹		Constants	Constant # 50 Sf ⁻¹ f.flatteng = +2.98257223563 × 10 ²
fld to dB	Function (monadic, linked)		fld→dB		Fixed pair conversions	Convert field ratio to decibel (TI : dB)
Flip bit	Function (monadic)		FB	FB	Bits and bytes	Flip bit n (TAM : FB __ TamNonReg menu)
Flip case (one character)	Alpha-shift (special)		<empty>		Text input	Set next alpha entry to flip lower/UPPER case (one character) (Shortcut : alpha f + <char>)
Flip flag	Command		FF	FF	Programming	Flip flag (toggle) (TAM : FF __ TamFlag menu)
Floor	Function (monadic)		floor	floor	Reals	Mathematical floor of number
floz _{UK} to cup _{UK}	Function (monadic, linked)		floz _{UK} →cup _{UK}		Volume conversions	Convert UK fluid ounce to UK imperial cup (TI : cup _{UK})
floz _{UK} to gal _{UK}	Function (monadic, linked)		floz _{UK} →gal _{UK}		Volume conversions	Convert UK fluid ounce to UK gallon (TI : gal _{UK})
floz _{UK} to in ³	Function (monadic, linked)		floz _{UK} →in ³		Volume conversions	Convert UK fluid ounce to cubic inch (TI : in ³)
floz _{UK} to ml	Function (monadic, linked)		floz _{UK} →ml		Volume conversions	Convert UK fluid ounce to millilitre (TI : ml)
floz _{UK} to tbbsp _{UK}	Function (monadic, linked)		floz _{UK} →tbbsp _{UK}		Volume conversions	Convert UK fluid ounce to UK imperial tablespoon (TI : tbbsp _{UK})
floz _{UK} to tsp _{UK}	Function (monadic, linked)		floz _{UK} →tsp _{UK}		Volume conversions	Convert UK fluid ounce to UK imperial teaspoon (TI : tsp _{UK})
floz _{US} to cup _{US}	Function (monadic, linked)		floz _{US} →cup _{US}		Volume conversions	Convert US fluid ounce to US customary cup (TI : cup _{US})
floz _{US} to gal _{US}	Function (monadic, linked)		floz _{US} →gal _{US}		Volume conversions	Convert US fluid ounce to US gallon (TI : gal _{US})
floz _{US} to in ³	Function (monadic, linked)		floz _{US} →in ³		Volume conversions	Convert US fluid ounce to cubic inch (TI : in ³)
floz _{US} to ml	Function (monadic, linked)		floz _{US} →ml		Volume conversions	Convert US fluid ounce to millilitre (TI : ml)
floz _{US} to Tbsp _{US}	Function (monadic, linked)		floz _{US} →Tbsp _{US}		Volume conversions	Convert US fluid ounce to US customary tablespoon (TI : Tbsp _{US})
floz _{US} to tsp _{US}	Function (monadic, linked)		floz _{US} →tsp _{US}		Volume conversions	Convert US fluid ounce to US customary teaspoon (TI : tsp _{US})
foe to J	Function (monadic, linked)		foe→J		Energy conversions	Convert foe to Joule (TI : J)
Font browser	Browser (nonpgm)		FBR	FBR	Text functions	Browse system fonts (character tables) (Info : Press [EXIT] to exit Font browser and browse using [▲] and [▼] ; Ref : https://47calc.com/doc/C47/Reference/C47_Font_browser.pdf)
For all	Character		∀		Characters	Character ∀ (Fontcode : 2C6F ₁₆ ; exported as 2200 ₁₆)
Force & Pressure conversions	MENU		[F&p:]	F&p:	Force & Pressure conversions	Convert between units of force and pressure (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> ↔ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_F-and-p_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Force loads conversions	MENU		[FLoads:]	FLoads:	Miscellaneous conversions	Convert between units of force loads ; typical structural loads units (Info : Flag CONV _{hp} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> → ← <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FLoads_page_1.pdf
Forcing autoscale	Setting	OFF	X:Y=1		Plotting	Switch on forcing autoscale on x- and y-axis to be the same ; not programmable - in PEM, use flag PLxy:1
Forcing autoscale	Flag	CLEAR	PLxy:1		Plotting	SET for forcing autoscale on x- and y-axis to be the same ; CLEAR for not forcing autoscale on x- and y-axis to be the same
FP group size	Setting (pgm)	3	FPGRP	FPGRP ₃	Display	Set fractional part group size (2-9 digits) (TAM : FPGRP _ TamNonReg.menu)
FP separator <none>	Setting (pgm)	OFF	NONE	FNONE ○	Display	Set fractional part separator to <none> (Info : Menu shows symbol ø)
FP separator comma	Setting (pgm)	OFF	COM,	FCOM, ○	Display	Set fractional part separator to comma
FP separator dot	Setting (pgm)	OFF	DOT·	FDOT· ○	Display	Set fractional part separator to dot
FP separator double space	Setting (pgm)	OFF	WSPC _{..}	FWSPC _{..} ○	Display	Set fractional part separator to double space
FP separator narrow space	Setting (pgm)	OFF	NSPC _{..}	FNSPC _{..} ○	Display	Set fractional part separator to narrow space
FP separator narrow tick	Setting (pgm)	OFF	TICK'	FTICK' ○	Display	Set fractional part separator to narrow tick
FP separator period	Setting (pgm)	OFF	PER.	FPER. ○	Display	Set fractional part separator to period
FP separator space	Setting (pgm)	ON	SPC _{..}	FSPC _{..} ●	Display	Set fractional part separator to space
FP separator tick	Setting (pgm)	OFF	WTICK'	FWTICK' ○	Display	Set fractional part separator to tick
FP separator underscore	Setting (pgm)	OFF	UNDR __	FUNDR __ ○	Display	Set fractional part separator to underscore
FP separator wide comma	Setting (pgm)	OFF	WCOM,	FWCOM, ○	Display	Set fractional part separator to wide comma
FP separator wide dot	Setting (pgm)	OFF	WDOT ·	FWDOT · ○	Display	Set fractional part separator to wide dot
FP separator wide period	Setting (pgm)	OFF	WPER.	FWPER. ○	Display	Set fractional part separator to wide period
Fraction 1/2	Character		$\frac{1}{2}$		Characters	Character $\frac{1}{2}$ (Fontcode : 00BD ₁₆)
Fraction 1/4	Character		$\frac{1}{4}$		Characters	Character $\frac{1}{4}$ (Fontcode : 00BC ₁₆)
Fraction mode full cycle	Setting	OFF	FRCYC	FRCYC □	Fractions	Switch on full cycle on key a b/c (g[Σ +]) ; not programmable - in PEM, use flag FRCYC (Info : When FRCYC is ON full cycle is available, when OFF, flag PROPFR is excluded (used as is) and OFF state is included in cycle)
Fraction mode full cycle	Flag	CLEAR	FRCYC		Fractions	SET for full cycle on key a b/c (g[Σ +]) ; CLEAR for limited cycle on key a b/c (g[Σ +]) (Info : When FRCYC is SET full cycle is available, when CLEAR, flag PROPFR is excluded (used as is) and OFF state is included in cycle)
Fraction show register name	Flag	CLEAR	FRCSRN		Fractions	SET for displaying register name in fractions mode ; CLEAR for not displaying register name in fractions mode (Prefix : x, y, z, t < or = or > or ≈)
Fractional Part	Function (monadic)		FP	FP	Fractions	Fractional Part of real number (Shortcut : #TAM [XEQ] (F) for closed number)
Fractional Part?	Command (logical)		FP?	FP?	Programming	Test X has nonzero fractional part and is Real number (1.0-1.5) (test function R? is true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Fractions mode	Setting	OFF	FRACT	FRACT □	Fractions	Switch on fractions mode ; not programmable - in PEM, use flag FRACT (Info : FRACT and IRFRAC are linked (both cannot be ON at the same time) ; /n or /max denotes maximum denominator (set interactively from menu DISP (DMX TAM variant) and from menu [INFO.3] fF5 (DMXX)) ; prefixes < and > may be shown as needed for rational fractions ; also see flag IRFRAC)
Fractions mode	Flag	CLEAR	FRACT		Fractions	SET for fractions mode ; CLEAR for fractions mode inactive (Info : FRACT and IRFRAC are linked (both cannot be SET at the same time) ; /n or /max denotes maximum denominator (set interactively from menu DISP (DMX TAM variant) and from menu [INFO.3] fF5 (DMXX)) ; prefixes < and > may be shown as needed for rational fractions ; also see flag IRFRAC ; SBI ≈ indicates FDIGS < 34 ; SBI is shown if flag SBfrac is SET ; exit fraction modes by .d or CLRMOD (longerpress [EXIT]))

FullName	Type	Default	Label	Catalog	Category	Extended description
Fractions modes	Setting (cyclic, pgm, stack)	OFF	a b/c		Fractions	Set and cycle fractions modes : proper (mixed), improper fractions (denominator determined by DMX, DENFIX, DENANY) ; or fractional approximations including irrationals ; exit fractions mode via .d (g[LOG]) ; starts in mode last used or as set by flags PROPF, FRACT and IRFRAC ; When FRCYC is SET full cycle is available, when CLEAR, flag PROPF is excluded (used as is) and OFF state is included in cycle (Shortcut : <a> [,] [,] <c> ; Info : IRFRAC and FRACT are linked (both cannot be SET at the same time) ; SBI xI or -I indicates that approximate multiples or fractions can be used, of the irrational numbers $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$, $\sqrt{7}$, ϕ , π^{-2} , π^{-1} , $\sqrt{\pi}$, π , π^2 , e^{-2} , e^{-1} , e and e^2 (with tolerance 10^{-24}) ; Prefix $\approx$ + <approximation> ; multiplication symbol SET for displaying multiplication symbol $\times$; SBI is shown if flag SBfrac is SET ; Ref : https://47calc.com/doc/C47/Reference/C47_Fractions.pdf)
FreeF	User Program		FreeF		Test programs	FreeF test program, available to load from PROGRAMS/ALLPGMS/FreeF.p47, using READP (after unzipping resources/testPgms.zip)
FreeFp	User Program		FreeFp		Test programs	FreeFp test program, available to load from PROGRAMS/ALLPGMS/FreeFp.p47, using READP (after unzipping resources/testPgms.zip)
FreFp2	User Program		FreFp2		Test programs	FreFp2 test program, available to load from PROGRAMS/ALLPGMS/FreFp2.p47, using READP (after unzipping resources/testPgms.zip)
ft to m	Function (monadic, linked)		ft→m		Distance conversions	Convert foot to metre (TI : m)
ftlbf to N-m	Function (monadic, linked)		ftlbf→N-m		Torque/moment conversions	Convert foot-pound force to Newton-metre (TI : N-m)
ft/s to km/h	Function (monadic, linked)		ft/s→km/h		Speed conversions	Convert foot per second to kilometre per hour (TI : km/h)
ft/s to m/s	Function (monadic, linked)		ft/s→m/s		Speed conversions	Convert foot per second to metre per second (TI : m/s)
ft/s to mph	Function (monadic, linked)		ft/s→mph		Speed conversions	Convert foot per second to mile per hour (TI : mph)
ft/s ² to m/s ²	Function (monadic, linked)		ft/s ² →m/s ²		Acceleration conversions	Convert foot per second squared to metre per second squared (TI : m/s ²)
ft ² to ha	Function (monadic, linked)		ft ² →ha		Area conversions	Convert square foot to hectare (TI : ha)
ft ² to m ²	Function (monadic, linked)		ft ² →m ²		Area conversions	Convert square foot to square metre (TI : m ²)
ft ³ to gal _{UK}	Function (monadic, linked)		ft ³ →gal _{UK}		Volume conversions	Convert cubic foot to UK gallon (TI : gal _{UK})
ft ³ to gal _{US}	Function (monadic, linked)		ft ³ →gal _{US}		Volume conversions	Convert cubic foot to US gallon (TI : gal _{US})
ft ³ to l	Function (monadic, linked)		ft ³ →l		Volume conversions	Convert cubic foot to litre (TI : l)
ftn to s	Function (monadic, linked)		ftn→s		Time conversions	Convert fortnight to second (TI : s)
Full stop	Character		.		Characters	Character . (Shortcut : alpha g[.] ; Info : Fontcode : 002E ₁₆)
Function key 1	F-key		F1		Function key	Function key 1 ; Keyboard [0]
Function key 2	F-key		F2		Function key	Function key 2 ; Keyboard [0]
Function key 3	F-key		F3		Function key	Function key 3 ; Keyboard [0]
Function key 4	F-key		F4		Function key	Function key 4 ; Keyboard [0]
Function key 5	F-key		F5		Function key	Function key 5 ; Keyboard [0]
Function key 6	F-key		F6		Function key	Function key 6 ; Keyboard [0]
Function keys do full cycle	Setting (pgm)	OFF	F.1234		User interface	Longpress control : Function keys do full cycle (Info : 1. primaryNM : unshifted ; 2. longpress : f-shift ; 3. longerpress : g-shift ; 4. longestpress : NOP)
Function keys skip f- and g-shift	Setting (pgm)	OFF	F.14		User interface	Longpress control : Function keys skip f- and g-shift (Info : 1. primaryNM : unshifted ; 4. longestpress : NOP)
Function keys skip g-shift	Setting (pgm)	ON	F.124		User interface	Longpress control : Function keys skip g-shift (Info : 1. primaryNM : unshifted ; 2. longpress : f-shift ; 4. longestpress : NOP)
Functions	MENU (ASM)		[FCNS]	FCNS	Catalog	Catalog of all calculator functions (Info : Type characters 1-2 to search ; Ref : https://47calc.com/doc/C47/Reference/C47_CAT-FCNS.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FCNS_page_1.pdf
Functions (equation)	MENU (ASM)		[FCNS]	FCNSe	Catalog	Catalog of all calculator functions available in Equation Input Mode (Info : Type characters 1-2 to search) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FCNS_EQN_page_1.pdf
fur to m	Function (monadic, linked)		fur→m		Distance conversions	Convert furlong to metre (TI : m)
fur/ftn to km/h	Function (monadic, linked)		fur/ftn→km/h		Speed conversions	Convert furlong per fortnight to kilometre per hour (TI : km/h)
fur/ftn to m/s	Function (monadic, linked)		fur/ftn→m/s		Speed conversions	Convert furlong per fortnight to metre per second (TI : m/s)
fur/ftn to mph	Function (monadic, linked)		fur/ftn→mph		Speed conversions	Convert furlong per fortnight to mile per hour (TI : mph)
G	Character		G		Characters	Character G (Fontcode : 0047 ₁₆) ; Keyboard alpha [ST0]
g	Character		g		Characters	Character g (Fontcode : 0067 ₁₆) ; Keyboard alpha f [ST0]
G breve	Character		Ĝ		Characters	Character Ĝ (Fontcode : 011E ₁₆) ; Info : press [▼] for ĝ at [aintl.2]fF1)
g breve	Character		ġ		Characters	Character ġ (Fontcode : 011F ₁₆) ; Info : press [▲] for ġ at [aintl.2]fF1)

FullName	Type	Default	Label	Catalog	Category	Extended description
g to carat	Function (monadic, linked)		g→carat		Mass conversions	Convert gram to carat (TI : carat:)
g to oz	Function (monadic, linked)		g→oz		Mass conversions	Convert gram to ounce (TI : oz:)
g to tr oz	Function (monadic, linked)		g→tr oz		Mass conversions	Convert gram to troy ounce (TI : tr oz:)
gal _{UK} to floz _{UK}	Function (monadic, linked)		gal _{UK} →floz _{UK}		Volume conversions	Convert UK gallon to UK fluid ounce (TI : floz _{UK} :)
gal _{UK} to ft ³	Function (monadic, linked)		gal _{UK} →ft ³		Volume conversions	Convert UK gallon to cubic foot (TI : ft ³ :)
gal _{UK} to ℓ	Function (monadic, linked)		gal _{UK} →ℓ		Volume conversions	Convert UK gallon to litre (TI : ℓ:)
gal _{US} to floz _{US}	Function (monadic, linked)		gal _{US} →floz _{US}		Volume conversions	Convert US gallon to US fluid ounce (TI : floz _{US} :)
gal _{US} to ft ³	Function (monadic, linked)		gal _{US} →ft ³		Volume conversions	Convert US gallon to cubic foot (TI : ft ³ :)
gal _{US} to ℓ	Function (monadic, linked)		gal _{US} →ℓ		Volume conversions	Convert US gallon to litre (TI : ℓ:)
GAMMA	Character		Γ		Characters	Character Γ (Fontcode : 03B3 ₁₆ ; Info : press [▼] for γ at [α...ω.1]F3)
gamma	Character		γ		Characters	Character γ (Fontcode : 03B3 ₁₆ ; Info : press [▲] for Γ at [A...Ω.1]F3)
Gamma function	Function (monadic)		Γ(x)	Γ(x)	Mathematics	Gamma function
Gauss peak fit	Setting	OFF	GaussF	GaussF □	Plotting and curve fitting	Set <BestF> to include Gauss peak curve fitting : y = ag e ^[-(x - a1)² / a2] ; deselects OrthoF (Info : Adds 256 to <BestF> ; TI : L.R. selected to <BestF>.)
Generalised extreme value cdf (lower)	Function (monadic)		GEV _▲	GEV _▲	Probability (real)	Generalised extreme value cumulative distribution (lower tail)
Generalised extreme value cdf (upper)	Function (monadic)		GEV _▲	GEV _▲	Probability (real)	Generalised extreme value cumulative distribution (upper tail)
Generalised extreme value distribution	MENU		[GEV:]	GEV:	Probability (real)	Generalised extreme value probability distribution (continuous) (TI : RegM = μ = ; RegS = σ = ; RegQ = ξ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_GEV_page_1.pdf
Generalised extreme value pdf	Function (monadic)		GEV _▫	GEV _▫	Probability (real)	Generalised extreme value probability density function
Generalised extreme value qf (inverse)	Function (monadic)		GEV ⁻¹	GEV ⁻¹	Probability (real)	Generalised extreme value inverse cumulative distribution (quantile)
Generalised proper sigma function	Function (dyadic)		σ _k [*]	σ _k [*]	Mathematics	Generalised proper sigma function using either a FACTORS matrix or Long integer as input in X
Generalised sigma function	Function (dyadic)		σ _k	σ _k	Mathematics	Generalised sigma function using either a FACTORS matrix or Long integer as input in X
Geocentric gravitational constant	Constant		GM _⊕		Constants	Constant # 17 GM _⊕ c.grav.geo = +3.986004418 × 10 ¹⁴ (Unit : m ³ /s ²)
Geometric cdf (lower)	Function (monadic)		Geom _▲	Geom _▲	Probability (int)	Geometric cumulative distribution (lower tail)
Geometric cdf (upper)	Function (monadic)		Geom _▲	Geom _▲	Probability (int)	Geometric cumulative distribution (upper tail)
Geometric distribution	MENU		[Geom:]	Geom:	Probability (int)	Geometric probability distribution (discrete) (TI : RegP = p =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Geom_page_1.pdf
Geometric mean	Command		⌘ _G	⌘ _G	Summary statistics	Data evaluation of geometric mean -- see Formula_XG.png : https://47calc.com/doc/Images/Formula_XG.png (TI : ⌘ _G = ; ⌘ _G =)
Geometric pmf	Function (monadic)		Geom _▫	Geom _▫	Probability (int)	Geometric probability mass function
Geometric qf (inverse)	Function (monadic)		Geom ⁻¹	Geom ⁻¹	Probability (int)	Geometric inverse cumulative distribution (quantile)
Gerver constant	Constant		μ _G		Constants	Constant # 82 μ _G c.gerver = +2.21953166887197 -- see https://en.wikipedia.org/wiki/Moving_sofa_problem (Info : Moving sofa problem)
Get angular display mode	Command	0	ADM#	ADM#	Angle tagging or conversion	Get angular display mode ; set interactively from menu MODE formats or from catalog (DEG ; D.MS ; RAD ; MULπ ; GRAD) and by ADM (Info : DEG : 0 ; D.MS : 1 ; RAD : 2 ; MULπ : 3 ; GRAD : 4)
Get Best Fit	Command		BestF#	BestF#	Plotting and curve fitting	Get parameter for which models are selected in the LR analysis (Info : Set in menu MODEL)
Get current menu	Command		MENU#	MENU#	Programming	Get current menu name ; followed by ↵ and page number if 2 or higher
Get hide parameter	Command	0	HIDE#	HIDE#	Display	Get parameter to hide small Real numbers or parts (Info : Set by HIDE)
Get integer sign mode	Command	2	ISM#	ISM#	Integers	Get integer sign mode ; set interactively from menu BITSET (1COMPL ; 2COMPL ; SIGNMT ; UNSIGN) and by ISM (Info : 1COMPL: 1 ; 2COMPL: 2 ; SIGNMT: -1 ; UNSIGN: 0)
Get Julian-Gregorian transition	Command	1752-09-14	J/G#	J/G#	Time functions	Get the day that Julian date changes over to Gregorian date (Info : Set by J/G)
Get max denominator for fractions	Command	64	DMX#	DMX#	Fractions	Get max denominator for fractions ; set interactively from menu DISP (DMX TAM variant) and from menu [INF0.3]fF5 (DMXX) (Info : Range is [2, 9999] or 0, indicating DMXmax = 32500 ; SBI is shown if flag SBfrac is SET)
Get number of bits set	Function (monadic)		#B	#B	Number bases	Get number of bits set
Get number of digits displayed	Command	3	NDEC#	NDEC#	Display	Get number of digits displayed ; set by DSP or interactively from menu MLoads: (parameter for FIX ; SCI ; ENG ; UNIT ; SIG ; ALL) and by NDEC (Info : Range is [0, 19])
Get number of local registers	Command		LocR#	LocR#	Registers	Get number of local registers (current routine) (Info : Set by LocR)
Get number range	Command		RNG#	RNG#	Reals	Get number range as 10 ⁿⁿ , where nn in [99, 6145] (Info : Set by RNG)
Get printer delay	Command		⌘DLAY#		Printing	Get printer delay

FullName	Type	Default	Label	Catalog	Category	Extended description
Get real number display format	Command	0	DF#	DF#	Reals	Get real number display format ; set interactively from menu MLoads: (formats FIX ; SCI ; ENG ; UNIT ; SIG ; ALL) and by DF (Info : FIX : 1 ; SCI : 2 ; ENG : 3 ; UNIT : 5 ; SIG : 4 ; ALL : 0)
Get rounding mode	Command	0	RMODE#	RMODE#	Reals	Get floating point rounding mode (Info : Set by RMODE)
Get significant digits	Command	34	SDIGS#	SDIGS#	Mathematics	Get the number of significant digits (1-34) for rounding after each operation (Info : Set by SDIGS)
Get significant digits for fractions	Command	34	FDIGS#	FDIGS#	Fractions	Get the number of significant digits (1-34) used by the approximations of the fraction modes (Info : Set by FDIGS)
Get Stack size	Command	8	SSIZE#	SSIZE#	Stack	Get Stack size (Info : Set by SSIZE4 or SSIZE8 ; Flag SSIZE8 is default SET)
Get submatrix	Command		GETM	M.GETM	Matrix operations	Get submatrix with Y rows and X columns from the indexed matrix starting at current element
Get TVM annual interest rate	Command (old)		>RCL1/a<		Financial	Old version of the command to get TVM annual interest rate (percentage) (TI : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM annual interest rate on [TVM.1]F2 instead)
Get TVM compounding periods	Command (old)		>RCLcp/a<		Financial	Old version of the command to get TVM compounding periods per annum (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM compounding periods on [TVM.1]fF6 instead)
Get TVM future value	Command (old)		>RCLFV<		Financial	Old version of the command to get TVM future value (TI : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM future value on [TVM.1]F5 instead)
Get TVM number of payments	Command (old)		>RCLn<		Financial	Old version of the command to get TVM number of payments (TI : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM number of payments on [TVM.1]F1 instead)
Get TVM payment	Command (old)		>RCLPMT<		Financial	Old version of the command to get TVM payment (TI : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM payment on [TVM.1]F4 instead)
Get TVM payment period	Command (old)		>RCLpp/a<		Financial	Old version of the command to get TVM payment period per annum (TI : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM payment period on [TVM.1]F6 instead)
Get TVM present value	Command (old)		>RCLPV<		Financial	Old version of the command to get TVM present value (TI : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use RCL to get value of TVM present value on [TVM.1]F3 instead)
Get volume	Command (HW)	11	VOL#	VOL#	Input-Output	Get volume (0-11) ; hardware only (DMCP setting) (Info : Set by VOL ; Error 126 -- Not available on the simulator -- is raised when this setting is performed on the simulator)
Get Week of Year rule	Command	1.4	WOY#	WOY#	Time functions	Get Week of Year rule (default : WOY150, week starts on Monday and week number depends on the first Thursday ; returns 1.4)
Get word size	Command	64	WSIZE#	WSIZE#	Bits and bytes	Get word size in bits, for Short integer (8.02-8.16) (TI : Bits = ; Info : set by WSIZE)
Giga	Command (nonpgm)		-G		Numeric input	Factor 10 ⁹
Giga binary	Command (nonpgm)		-Gi		Numeric input	Factor 10 ³⁰
Go to	Command (PEM)		GTO	GTO	Programming	Go to global or local label ; GTO. to go to (local) label or step ; GTO.. to move the program pointer to the end of program memory ; GTO↑ to go to the start of the (previous) program or jump to the start of program memory ; GTO↓ to go to the next program or jump to the end of program memory (TAM : GTO __ TamLabel menu ; Info : GTO + TAM [XEQ] to enter global GTO '_. TamAlpha menu ; GTO + button : on [TamLabel.1]F3 to enter GTO :__ TamLocalLabel menu for easy access to local labels a-l, D-F or local named labels (additionally pressing button α on [TamLocalLabel.1]F3 or TAM [XEQ] to enter GTO :.. TamAlpha menu)) ; Keyboard g[XEQ]
Go to matrix column	Command		GOTO Column		Matrix operations	Go to matrix column for GOTO (TAM : GOTO Column ____ TamNonReg menu)
Go to matrix element	Command		GOTO	M.GOTO	Matrix operations	Go to matrix element using GOTO Row ; GOTO Column ((TAM : GOTO Row ; GOTO Column)
Go to matrix row	Command		GOTO Row		Matrix operations	Go to matrix row for GOTO (TAM : GOTO Row ____ TamNonReg menu)

FullName	Type	Default	Label	Catalog	Category	Extended description
Golden ratio	Constant		ϕ		Constants	Constant # 74 ϕ r.golden = +1.618033988749894848204586834365638 (Info : $\phi = (1 + \sqrt{5}) / 2$)
grad to deg	Function (monadic, linked)		grad→deg		Angle conversions	Convert gradian to degree (untagged) (TI : deg:)
grad to rad	Function (monadic, linked)		grad→rad		Angle conversions	Convert gradian to radian (untagged) (TI : rad:)
Grapher [EQN]	MENU		[f Graph]	f Graph	Equations	Grapher (variables) menu for the algebraic expression entered in EQ.NEW ; enter value and press <var> button(s) to initialise variable(s), then press button for variable to be plotted using the drawing functions in menu Graphs ; if only one variable exists it will be selected and starred automatically (Ref : https://47calc.com/doc/Application%20Notes/AN0013_C47_JM_Graphs.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_f_Graph_page_1.pdf
Graphics display mode	Variable (longint)	0	GRAMOD	GRAMOD	Programming	Reserved LongInteger variable for the graphics display mode (GRAMOD) ; set interactively from menu P.FN1 (AGRAPH) (Info : OR: 0 ; SET: 1 ; OFF: 2 ; XOR: 3)
Graphing...	MENU		[Graphs]	Graphs	Plotting	Equation graphing functions Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Graphs_page_1.pdf
Greater or equal than	Character		$\geq$		Characters	Character $\geq$ (Fontcode : 2265 ₁₆)
Greater than	Character		>		Characters	Character > (Fontcode : 003E ₁₆)
Greatest common divisor	Function (dyadic)		GCD	GCD	Integers	Greatest common divisor of X and Y
Grow (matrix edit)	Setting	OFF	GROW	M.GROW 0	Matrix operations	Switch on grow (matrix edit) ; not programmable - in PEM, use flag GROW (Info : SBI is shown if flag SBmx is SET)
Grow (matrix edit)	Setting	ON	WRAP	M.WRAP 0	Matrix operations	Switch on wrap (matrix edit) ; not programmable - in PEM, use flag GROW (Info : SBI is shown if flag SBmx is SET)
Grow (matrix edit)	Flag	CLEAR	GROW		Matrix operations	SET for grow (matrix edit) ; CLEAR for wrap (matrix edit) (Info : SBI is shown if flag SBmx is SET)
Gudermannian function	Function (monadic)		gd	gd	Mathematics	Gudermannian function -- see http://en.wikipedia.org/wiki/Gudermannian_function
GudrmPL	User Program		GudrmPL		Test programs	GudrmPL example program, available to load from PROGRAMS/GudrmPL.p47, using READP (Info : Gudermannian inverse function plot, J Mostert (jaymos))
H	Character		H		Characters	Character H (Fontcode : 0048 ₁₆) ; Keyboard alpha [RCL]
h	Character		h		Characters	Character h (Fontcode : 0068 ₁₆) ; Keyboard alpha f [RCL]
h stroke	Character		h̄		Characters	Character h̄ (Fontcode : 0127 ₁₆)
ha to acre	Function (monadic, linked)		ha→acre		Area conversions	Convert hectare to acre (TI : acre:)
ha to acre _{US}	Function (monadic, linked)		ha→acre _{US}		Area conversions	Convert hectare to US acre (TI : acre _{US} :)
ha to ft ²	Function (monadic, linked)		ha→ft ²		Area conversions	Convert hectare to square foot (TI : ft ² :)
ha to km ²	Function (monadic, linked)		ha→km ²		Area conversions	Convert hectare to square kilometre (TI : km ² :)
ha to m ²	Function (monadic, linked)		ha→m ²		Area conversions	Convert hectare to square metre (TI : m ² :)
Harmonic mean	Command		$\bar{x}_H$	$\bar{x}_H$	Summary statistics	Data evaluation of harmonic mean -- see Formula_XH.png : https://47calc.com/doc/Images/Formula_XH.png (TI : $\bar{x}_H = ; \bar{y}_H =$)
Hermite polynomials (physics)	Function (dyadic)		H _{nP}	H _{nP}	Mathematics	Hermite polynomials (physics) (Parameter : x = X ; n = Y)
Hermite polynomials (probability)	Function (dyadic)		H _n	H _n	Mathematics	Hermite polynomials (probability) (Parameter : x = X ; n = Y)
Hexadecimal	Setting (pgm)	OFF	HEX	HEX	Number bases	Convert X to hexadecimal and toggle hexadecimal mode ; if KEY _{A-F} is SET, digits A-F can be entered by pressing row 2 keys (Shortcut : #TAM [RCL] (H) ; Info : values are displayed with subscript ₁₆)
High bin	Command		↑BIN	↑BIN	Plotting and statistics	High bin (TI : ↑BIN : ; ↓BIN : ; nBINS :)
Histogram	MENU (item)		[HPLOT]	HPLOT	Plotting and statistics	Histogram plotting (programmable) (Info : CAT.MENUS HPLOT) Docs: https://47calc.com/doc/C47/Menus/xxx1.pdf
Histogram	MENU		[HIST]	HIST	Plotting and statistics	Histogram functions Docs: https://47calc.com/doc/C47/Menus/C47_Menu_HIST_page_1.pdf
Histogram	MENU		[HPLOT]	HPLOT	Plotting and statistics	Histogram plotting (programmable) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_HPLOT_page_1.pdf
Histogram matrix	Variable (matrix)		HISTO	HISTO	Plotting and statistics	Reserved Matrix variable (cannot be deleted) for the histogram matrix (HISTO) ; created from STATS using menu HIST ; not created after RESET
Histogram Normal	Command		HNORM	HNORM	Plotting and statistics	Fit Gauss distribution through HISTO data (programmable)
Histogram X	Command		HISTOX	HISTOX	Plotting and statistics	Evaluate first column of STATS and store in HISTO (TI : ↑BIN : ; ↓BIN : ; nBINS :)
Histogram Y	Command		HISTOY	HISTOY	Plotting and statistics	Evaluate second column of STATS and store in HISTO (TI : ↑BIN : ; ↓BIN : ; nBINS :)

FullName	Type	Default	Label	Catalog	Category	Extended description
HMS to HR	Function (monadic, linked)		HMS→HR		Fixed pair conversions	Convert sexagesimal format hours to decimal hours (TI : decimal h; Ref : https://47calc.com/doc/Application%20Notes/AN0014_C47_JM_dms_hms_and_ms.pdf)
HOME	MENU		[HOME]	HOME	Customisation	User menu to quickly access user selected menus and functions ; all buttons are user assignable ('riveted' look) ; initially populated for basic scitech options ; reset using HOME.R (Shortcut : triple [f/g] (because HOME [Ⓐ] is SET) ; longerpress [f/g] (because HOME [Ⓐ] is SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_HOME_page_1.pdf
HOME menu f/g shortcut	Setting	ON	HOME [Ⓐ]	HOME [Ⓐ] ▣	Customisation	Switch on HOME menu activated by triple and longerpress f/g-shift ; not programmable - in PEM, use flag HOME [Ⓐ] (Info : HOME [Ⓐ] and MyM [Ⓐ] are linked (both cannot be ON at the same time ; HOME [Ⓐ] pertains to layouts containing key [f/g] only and also enables longerpress assignment to this key)
HOME menu f/g shortcut	Flag	SET	HOME [Ⓐ]		Customisation	SET for HOME menu activated by triple and longerpress f/g-shift ; CLEAR for HOME menu f/g shortcut inactive (Info : HOME [Ⓐ] and MyM [Ⓐ] are linked (both cannot be SET at the same time) ; HOME [Ⓐ] pertains to layouts containing key [f/g] only and also enables longerpress assignment to this key)
HOME menu reset	Command		HOME.R		Cleanup	Reset all HOME menu user assignments (and open menu) (TI : HOME menu reset to default)
HOME menu shown	Setting	OFF	HOMEb	HOMEb □	Customisation	Switch on HOME menu shown ; not programmable - in PEM, use flag HOMEb (Info : HOMEb and MyMb are linked (both cannot be ON at the same time ; applies when all menus are exited using EXIT)
HOME menu shown	Flag	CLEAR	HOMEb		Customisation	SET for HOME menu shown ; CLEAR for HOME menu not shown (Info : HOMEb and MyMb are linked (both cannot be SET at the same time) ; applies when all menus are exited using EXIT)
Hourglass	Character		⌚		Characters	Character ⌚ (Fontcode : 231B ₁₆)
Hours	Function (monadic)		HOURL	HOURL	Time functions	Hours (of time in X)
HP-82240 printer	Setting	ON	82240	82240 Ⓢ	Printing	Set the printer type to HP-82240 (Info : Select this option for the HP-82240A or HP-82240B, or any printer compatible with the HP-82240)
HP12C standard precision	Flag	CLEAR	HP12C		Financial	SET for HP12C standard precision of 2 decimals ; CLEAR for full C47 accuracy (Info : The HP12C standard precision means that PMT is rounded to 2 decimals before amortisation is computed, so the schedule matches a printed bank statement)
HP12C standard precision	Setting (pgm)	OFF	HP12C	HP12C □	Financial	Switch on HP12C standard precision of 2 decimals (Info : The HP12C standard precision means that PMT is rounded to 2 decimals before amortisation is computed, so the schedule matches a printed bank statement)
HP35fun	User Program		HP35fun		Test programs	HP35fun example program, available to load from PROGRAMS/HP35fun.p47, using READP (Info : Replacement for this (development) function, being a fun HP35 mode. No emulation, no simulation. Just a bit of fun. Recommend to save your settings into register 35: [ST0] - Config 35 ; Ref : https://47calc.com/doc/C47/Reference/C47_HP35.pdf)
HP42S Line Feed picture	Character		␣		Characters	Character ␣ (Fontcode : 240A ₁₆)
HP42S Small black square	Character		■		Characters	Character ■ (Fontcode : 25AA ₁₆)
hp _E to W	Function (monadic, linked)		hp _E →W		Power conversions	Convert electrical horsepower to Watt (TI : W _E)
hp _M to W	Function (monadic, linked)		hp _M →W		Power conversions	Convert metric horsepower to Watt (TI : W _M)
hp _{UK} to W	Function (monadic, linked)		hp _{UK} →W		Power conversions	Convert UK horsepower to Watt (TI : W _U)
HR to HMS	Function (monadic, linked)		HR→HMS		Fixed pair conversions	Convert decimal hours to sexagesimal format hours (TI : hh:mm:ss ; Ref : https://47calc.com/doc/Application%20Notes/AN0014_C47_JM_dms_hms_and_ms.pdf)
Humorous conversions	MENU		[FFF+:]	FFF+:	Humorous conversions	Conversions to and from the furlong-firkin-fortnight (FFF) system (and bananas and beardseconds) -- see https://en.wikipedia.org/wiki/FFF_system (Info : Flag CONV _{HF} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> ↔ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FFF+_page_1.pdf
Hyperbolic cosine	Function (monadic)		cosh	cosh	Mathematics	Hyperbolic cosine
Hyperbolic fit	Setting	OFF	HypF	HypF □	Plotting and curve fitting	Set <BestF> to include Hyperbolic curve fitting : y = (a ₀ + a ₁ x) ⁻¹ ; deselects OrthoF (Info : Adds 32 to <BestF> ; TI : L.R. selected to <BestF>.)
Hyperbolic sine	Function (monadic)		sinh	sinh	Mathematics	Hyperbolic sine
Hyperbolic tangent	Function (monadic)		tanh	tanh	Mathematics	Hyperbolic tangent
Hyperfine transition frequency of ¹³³ Cs	Constant		Δν _{Cs}		Constants	Constant # 60 Δν _{Cs} frq.hypf.cs = +9.19263177 × 10 ⁹ (Unit : Hz)

FullName	Type	Default	Label	Catalog	Category	Extended description
Hypergeometric cdf (lower)	Function (monadic)		Hyper _↓	Hyper _↓	Probability (int)	Hypergeometric cumulative distribution (lower tail)
Hypergeometric cdf (upper)	Function (monadic)		Hyper _↑	Hyper _↑	Probability (int)	Hypergeometric cumulative distribution (upper tail)
Hypergeometric distribution	MENU		[Hyper:]	Hyper:	Probability (int)	Hypergeometric probability distribution (discrete) (TI : RegM = N = ; RegN = n = ; RegQ = K =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Hyper_page_1.pdf
Hypergeometric pmf	Function (monadic)		Hyper _p	Hyper _p	Probability (int)	Hypergeometric probability mass function
Hypergeometric qf (inverse)	Function (monadic)		Hyper ⁻¹	Hyper ⁻¹	Probability (int)	Hypergeometric inverse cumulative distribution (quantile)
I	Character		I		Characters	Character I (Fontcode : 0049 ₁₆) ; Keyboard alpha [R4]
i	Character		i		Characters	Character i (Fontcode : 0069 ₁₆) ; Keyboard alpha f[R4]
I acute	Character		İ		Characters	Character İ (Fontcode : 00CD ₁₆ ; Info : press [▼] for i at [aintl.2] fF3)
i acute	Character		ı		Characters	Character ı (Fontcode : 00ED ₁₆ ; Info : press [▲] for İ at [aintl.2] fF3)
I breve	Character		Ĭ		Characters	Character Ĭ (Fontcode : 012C ₁₆ ; Info : press [▼] for i at [aintl.2] gF1)
i breve	Character		ĩ		Characters	Character ĩ (Fontcode : 012D ₁₆ ; Info : press [▲] for Ĭ at [aintl.2] gF1)
I circumflex	Character		Î		Characters	Character Î (Fontcode : 00CE ₁₆ ; Info : press [▼] for î at [aintl.2] fF4)
i circumflex	Character		î		Characters	Character î (Fontcode : 00EE ₁₆ ; Info : press [▲] for Î at [aintl.2] fF4)
I dieresis	Character		Ï		Characters	Character Ï (Fontcode : 00CF ₁₆ ; Info : press [▼] for i at [aintl.2] fF5)
i dieresis	Character		ï		Characters	Character ï (Fontcode : 00EF ₁₆ ; Info : press [▲] for Ï at [aintl.2] fF5)
I dot	Character		İ		Characters	Character İ (Fontcode : 0130 ₁₆ ; Info : press [▼] for i at [aintl.2] gF3 (not Lowercase of i))
i dotless	Character		ı		Characters	Character ı (Fontcode : 0131 ₁₆ ; Info : press [▲] for İ at [aintl.2] gF3 (not UPPERcase of i))
I grave	Character		İ		Characters	Character İ (Fontcode : 00CC ₁₆ ; Info : press [▼] for i at [aintl.2] fF2)
i grave	Character		ı		Characters	Character ı (Fontcode : 00EC ₁₆ ; Info : press [▲] for İ at [aintl.2] fF2)
I macron	Character		Ĭ		Characters	Character Ĭ (Fontcode : 012A ₁₆ ; Info : press [▼] for i at [aintl.2] fF6)
i macron	Character		ĩ		Characters	Character ĩ (Fontcode : 012B ₁₆ ; Info : press [▲] for Ĭ at [aintl.2] fF6)
I ogonek	Character		Į		Characters	Character Į (Fontcode : 012E ₁₆ ; Info : press [▼] for i at [aintl.2] gF2)
i ogonek	Character		į		Characters	Character į (Fontcode : 012F ₁₆ ; Info : press [▲] for Į at [aintl.2] gF2)
IBessI	User Program		IBessI		Test programs	IBessI test program, available to load from PROGRAMS/ALLPGMS/IBessI.p47, using READP (after unzipping resources/testPgms.zip)
IBessP	User Program		IBessP		Test programs	IBessP test program, available to load from PROGRAMS/ALLPGMS/IBessP.p47, using READP (after unzipping resources/testPgms.zip)
Identical to	Character		≡		Characters	Character ≡ (Fontcode : 2261 ₁₆)
Ignore one error	Flag	CLEAR	IGNIER		Programming	SET for calculator ignoring next error; CLEAR for calculator not ignoring error(s) (Info : IGNIER is cleared subsequently)
Imaginary <i>i</i>	Setting (pgm)	ON	CPX <i>i</i>	CPX <i>i</i> Ⓞ	Complex numbers	Switch on displaying <i>i</i> as the imaginary number (Info : <i>i</i> or <i>j</i> displayed in stack and on soft buttons)
Imaginary <i>j</i>	Setting (pgm)	OFF	CPX <i>j</i>	CPX <i>j</i> Ⓞ	Complex numbers	Switch on displaying <i>j</i> as the imaginary number (Info : <i>i</i> or <i>j</i> displayed in stack and on soft buttons)
Imaginary part	Function (monadic)		Im	Im	Complex numbers	Imaginary part of Complex number
Imaginary unit	Symbol		<i>i</i>		Complex numbers	Mathematical symbol <i>i</i> (Info : Displayed according to flag CPX <i>j</i>)
Import registers	Command		IMPORTr	IMPORTr	Input-Output	Import registers from text data file (.d47), to destination address specified in the file (Info : DMCP : File open dialog ("Import Register File" -- DATA/); TI : Data file loaded; Ref : https://47calc.com/doc/Application%20Notes/AN0025_C47_R47_JM_d47_fileformat.pdf)
in to Banana	Function (monadic, linked)		in→Banana		Distance conversions	Convert inch to Banana length (TI : Banana:)
in to brds	Function (monadic, linked)		in→brds		Distance conversions	Convert inch to beardsecond (TI : brds:)
in to cm	Function (monadic, linked)		in→cm		Distance conversions	Convert inch to Centimetre (TI : cm:)
in to mm	Function (monadic, linked)		in→mm		Distance conversions	Convert inch to millimetre (TI : mm:)
in-lbf to N-m	Function (monadic, linked)		in-lbf→N-m		Torque/moment conversions	Convert inch-pound force to Newton-metre (TI : N-m:)
in/s ² to m/s ²	Function (monadic, linked)		in/s ² →m/s ²		Acceleration conversions	Convert inch per second squared to metre per second squared (TI : m/s ² :)
Incomplete elliptic integral (1st)	Function (dyadic)		F(φ,m)	F(φ,m)	Mathematics	Incomplete elliptic integral of the 1st kind (Parameter : φ = X ; m = Y ; Info : φ is amplitude angle (any angle mode))
Incomplete elliptic integral (2nd)	Function (dyadic)		E(φ,m)	E(φ,m)	Mathematics	Incomplete elliptic integral of the 2nd kind (Parameter : φ = X ; m = Y ; Info : φ is amplitude angle (any angle mode))
Increment	Command		INCR	INCR	Programming	Increment range number in register or variable (ccc.fffii, where ccc is counter, fff is final value, ii is increment), by increment (TAM : INCR __ Tam menu)
Increment	Character		Δ		Characters	Character Δ (Fontcode : 2206 ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Increment column index	Command	<col>	J+	J+	Matrix operations	Increment column index J of indexed matrix ; wraps automatically ; does not put value on the stack ; menu button J+ on [MATX.3] F8 displays value as subscript (only if indexed matrix exists) (TI : M[I _r J _c]=<name> [<row> <col>])
Increment row index	Command	<row>	I+	I+	Matrix operations	Increment row index I of indexed matrix ; wraps automatically ; does not put value on the stack ; menu button I+ on [MATX.3] F1 displays value as subscript (only if indexed matrix exists) (TI : M[I _r J _c]=<name> [<row> <col>])
Increment skip on equal	Command		ISE	ISE	Programming	Increment skip on equal, using range number in register or variable (ccc.fffii, where ccc is counter, fff is final value, ii is increment) (TAM : ISE __ Tam menu)
Increment skip on greater	Command		ISG	ISG	Programming	Increment skip on greater, using range number in register or variable (ccc.fffii, where ccc is counter, fff is final value, ii is increment) (TAM : ISG __ Tam menu)
Increment skip on zero	Command		ISZ	ISZ	Programming	Increment skip on zero, using range number in register or variable (ccc.fffii, where ccc is counter, fff is final value, ii is increment) (TAM : ISZ __ Tam menu ; Info : time values may be used as the range number, increment is one hour)
Index matrix	Command		INDEX	INDEX	Matrix operations	Index matrix in a register or variable ; set row I to 1, column J to 1 ; clear flags WRPEDG and WRPEND ; index wraps automatically, setting these flags ; index is dropped upon exit of matrix editor (TAM : INDEX __ Tam menu ; TI : M[I _r J _c]=<name> [<row> <col>])
Index matrix	Command (TAM)		...INDEX	INDEX	Trailing input	Presented in menu TamSto to Index matrix in a register or variable ; set row I to 1, column J to 1 ; clear flags WRPEDG and WRPEND ; index wraps automatically, setting these flags ; index is dropped upon exit of matrix editor (TAM : INDEX __ Tam menu ; TI : M[I _r J _c]=<name> [<row> <col>])
Indian formatting	Setting (pgm)	OFF	INDIA	S.IND ◊	Display	Set to Indian regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 14.09.1752 ; Week of Year rule set: Sunday.Saturday)
Indirect T	Command (TAM)		→T		Trailing input	Presented in TAM menus for commands accessing indirect input using stack register T
Indirect X	Command (TAM)		→X		Trailing input	Presented in TAM menus for commands accessing indirect input using stack register X
Indirect Y	Command (TAM)		→Y		Trailing input	Presented in TAM menus for commands accessing indirect input using stack register Y
Indirect Z	Command (TAM)		→Z		Trailing input	Presented in TAM menus for commands accessing indirect input using stack register Z
Indirection	Command (TAM)		→		Trailing input	Presented in TAM menus for commands accessing indirect input (Info : Opens TamIndirect menu for the command that activated the current TAM menu)
Infinite sum (RPN)	Command		$\omega \sum_n$	$\omega \sum_n$	RPN Calculus and plotting	Approximate infinite sum using RPN program ; $\omega \sum_n$ (from Z to Y in steps of X, stopping when Y is reached, or - for Real output - when the last digit of the answer at the SDIGS setting does not change anymore) ; terms must be decreasing ; returns number of iterations in Y ; interrupt by [EXIT] -- see Formula_SIGMAN.png : https://47calc.com/doc/Images/Formula_SIGMAN.png (TAM : $\omega \sum_n$ __ TamLblOnly menu ; Info : <from> ENTER <to> ENTER <step> $\omega \sum_n$; displays Loop: n, current result, where n is iteration counter ; shown if flag MONIT is SET ; Ref : https://47calc.com/doc/Application%20Notes/AN0008_C47_JM_Programmed_Sums1.pdf)
Infinities?	Command (logical)		$\pm \omega ?$	$\pm \omega ?$	Programming	Test X contains positive or negative infinite value
Infinity	Character		ω		Characters	Character ω (Fontcode : 221E16)
Infinity	EasyAccess (TAM)		ω		Trailing input	Special infinity button on [TamNorm.1] F2 to enter parameter value ω
Information	MENU		[INFO]	INFO	Information	System information and some information about the value in the X-register ; Keyboard g[.] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_INFO_page_1.pdf
inHg to Pa	Function (monadic, linked)		inHg→Pa		Pressure conversions	Convert inch of Mercury to Pascal (TI : Pa:)
in ² to mm ²	Function (monadic, linked)		in ² →mm ²		Area conversions	Convert square inch to square millimetre (TI : mm ² :)
in ³ to floz _{UK}	Function (monadic, linked)		in ³ →floz _{UK}		Volume conversions	Convert cubic inch to UK fluid ounce (TI : floz _{UK} :)
in ³ to floz _{US}	Function (monadic, linked)		in ³ →floz _{US}		Volume conversions	Convert cubic inch to US fluid ounce (TI : floz _{US} :)
in ³ to mL	Function (monadic, linked)		in ³ →mL		Volume conversions	Convert cubic inch to millilitre (TI : mL:)
in ³ to mm ³	Function (monadic, linked)		in ³ →mm ³		Volume conversions	Convert cubic inch to cubic millimetre (TI : mm ³ :)

FullName	Type	Default	Label	Catalog	Category	Extended description
Input	Command (PEM)		INPUT	INPUT	Programming	Halt program execution, push current value, prompt and accept input for register or variable (TAM : INPUT __ Tam menu)
Input Complex number	Setting (pgm)	OFF	i C	i C O	Numeric input	New numeric input is put on the stack as Complex number (2.0-2.5)
input Long integer	Setting (pgm)	OFF	i LI	i LI O	Numeric input	New numeric input is put on the stack as Long integer (0) and entry of the decimal radix is ignored (Info : Switch on dZ.0 for displaying Long integers as Real ; not programmable - in PEM, use flag dZ.0)
Input Long integer/Real number	Setting (pgm)	ON	i LI/R	i LI/R O	Numeric input	New numeric input is put on the stack as Long integer (0) or Real number (1.0-1.5) (Info : Uses the decimal radix (default ".") to determine the numeric datatype)
input Real number	Setting (pgm)	OFF	i R	i R O	Numeric input	New numeric input is put on the stack as Real number (1.0-1.5)
Input/Output	MENU		[I/O]	I/O	Input-Output	I/O functions (read/load, write/save, export program, in-export registers, SNAP, audio, print) ; Keyboard g[-] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_I-O_page_1.pdf
Insert column	Command		INSC	M.INSC	Matrix operations	Insert column into matrix, at the cursor position
Insert row	Command		INSR	M.INSR	Matrix operations	Insert row into matrix, at the cursor position
Integer divide	Function (dyadic)		IDIV	IDIV	Integers	Integer divide
Integer divide and remainder	Function (dyadic)		IDIVR	IDIVR	Integers	Integer divide (X) and remainder (Y)
Integer Part	Function (monadic)		IP	IP	Fractions	Integer Part of number (returns Real number) (Shortcut : #TAM [R+] (I) for closed number)
Integer product (RPN)	Command		i Π _n	i Π _n	RPN Calculus and plotting	Integer product using RPN program ; i Π _n (from Z to Y in steps of X) ; interrupt by [EXIT] -- see Formula_iPin.png : https://47calc.com/doc/Images/Formula_iPin.png (TAM : i Π _n __ TamLbLOnly menu ; Info : <from> ENTER <to> ENTER <step> i Π _n ; displays Loop: n, current result, where n is iteration counter ; shown if flag MONIT is SET)
Integer sum (RPN)	Command		i Σ _n	i Σ _n	RPN Calculus and plotting	Integer sum using RPN program ; i Σ _n (from Z to Y in steps of X) ; interrupt by [EXIT] -- see Formula_iSIGMAN.png : https://47calc.com/doc/Images/Formula_iSIGMAN.png (TAM : i Σ _n __ TamLbLOnly menu ; Info : <from> ENTER <to> ENTER <step> i Σ _n ; displays Loop: n, current result, where n is iteration counter ; shown if flag MONIT is SET)
Integer Z	Character		Z		Characters	Character Z (Fontcode : 2124 ₁₆)
Integer?	Command (logical)		INT?	INT?	Programming	Test X is short integer (8.02-8.16), long integer (0) or Real number (1.0-1.5) with zero fractional part (test function SINT?, LINT? or R? is true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Integers	MENU		[INTS]	INTS	Integers	Short integer functions ; Keyboard g[x] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_INTS_page_1.pdf
Integral	Symbol		∫		Mathematics and characters	Integral (Fontcode : 222B ₁₆)
Integrator (RPN)	MENU		[f d]	f d	RPN Calculus and plotting	Integrator (variables) menu for the RPN program (with MVAR variables) selected with TamLbLOnly menu ; enter value and press <var _n > button(s) to set variables, then press button for variable to be used by the integrator in menu Toolf ; in Program Entry Mode, the RPN program must be specified by PGMINT and the variable with the Tam menu ; tolerance set by variable ACC (TAM : f d __ TamLbLOnly menu (uses Tam menu in PEM, to specify variable to integrate for)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Integral-fd_page_1.pdf
Integrator (stack limits)	Command		∫ _Y ^X	∫ _Y ^X	Integrator	Solve the integral for the expression entered in the equation editor or the RPN program (with MVAR variables) selected in TAM ; in Program Entry Mode, RPN program must be specified by PGMINT ; integrator limits set from stack (Y, X) ; tolerance set by variable ACC (TAM : ∫ _Y ^X __ Tam menu (in PEM, to specify variable to integrate for) ; TI : Accuracy ≈ ; Info : ∫ ≈ displays the accumulated integral sum, the current accuracy achieved, the level counter from 7 down to 0 and an iteration counter ; shown if flag MONIT is SET)
Integrator (variable limits)	Command		∫	f d	Integrator	Solve the integral for the expression entered in the equation editor or the RPN program (with MVAR variables) selected in TAM ; in Program Entry Mode, RPN program must be specified by PGMINT ; integrator limits set by variables (Vlim, ALim) ; tolerance set by variable ACC (TAM : ∫ __ Tam menu (in PEM, to specify variable to integrate for) ; TI : Accuracy ≈ ; Info : ∫ ≈ displays the accumulated integral sum, the current accuracy achieved, the level counter from 7 down to 0 and an iteration counter ; shown if flag MONIT is SET)

FullName	Type	Default	Label	Catalog	Category	Extended description
Integrator [EQN]	MENU		$\int f$	$\int f$	Integrator	Integrator (variables) menu for the algebraic expression entered in the equation editor ; enter value and press <var> button(s) to set variables, then press button for variable to be used by the integrator in menu Toolf or this menu ; if only one variable exists it will be selected and starred automatically ; tolerance set by variable ACC (Info : TI : "Select Integrator Variable" is presented if Toolf is activated without a variable having been selected first) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Integral-f_page_1.pdf
Integrator running	Flag (system)	CLEAR	INTING		Integrator	SET for integrator running; CLEAR for integrator not running
Integrator tools (RPN)	MENU		[Toolf]		Integrator	Integrator tools and parameter settings (Info : Toolf menu is typically activated by <var2>+ on [fd (MVAR).1] F2) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ToolInt_ADV_page_1.pdf
Integrator tools [EQN]	MENU		[Toolf]	Toolf	Integrator	Integrator tools and parameter settings Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ToolInt_EQN_page_1.pdf
Interquartile range	Command		xIQR	xIQR	Summary statistics	Interquartile range for both X and Y ; this is equal to Q.3 - Q.1 (TI : iqr _x = ; iqr _y =)
Intersection	Character		n		Characters	Character n (Fontcode : 2229 ₁₆)
IntP	User Program		IntP		Test programs	IntP test program, available to load from PROGRAMS/ALLPGMS/IntP.p47, using READP (after unzipping resources/testPgms.zip)
in ⁴ to mm ⁴	Function (monadic, linked)		in ⁴ →mm ⁴		Fixed pair conversions	Convert inch to the power 4 to millimetre to the power 4 (TI : mm ⁴)
Inverse Gudermannian function	Function (monadic)		ga ⁻¹	ga ⁻¹	Mathematics	Inverse Gudermannian function -- see http://en.wikipedia.org/wiki/Gudermannian_function
Inverse hyperbolic cosine	Function (monadic)		arcosh	arcosh	Mathematics	Inverse hyperbolic cosine
Inverse hyperbolic sine	Function (monadic)		arsinh	arsinh	Mathematics	Inverse hyperbolic sine
Inverse hyperbolic tangent	Function (monadic)		artanh	artanh	Mathematics	Inverse hyperbolic tangent
Inverse of Lambert's W function (principal)	Function (monadic)		W ⁻¹	W ⁻¹	Mathematics	Inverse of Lambert's W function (principal branch, ≥ -1)
Invert matrix	Function (monadic, legacy)		>INVRT<		Matrix operations	Legacy version of function [M] ⁻¹ ; Invert matrix in X (exists only when [M] ≠ 0) (Info : Function >INVRT< is superseded by [M] ⁻¹ on [MATK2] F1)
Invert matrix	Function (monadic)		[M] ⁻¹	[M] ⁻¹	Matrix operations	Invert matrix in X (exists only when [M] ≠ 0) (Shortcut : [1/x] ; Info : Error 22 -- Singular matrix -- is raised when [M] = 0)
Inverted exclamation mark	Character		¡		Characters	Character ¡ (Fontcode : 00A1 ₁₆)
Inverted question mark	Character		¿		Characters	Character ¿ (Fontcode : 00BF ₁₆)
in ⁶ to mm ⁶	Function (monadic, linked)		in ⁶ →mm ⁶		Fixed pair conversions	Convert inch to the power 6 to millimetre to the power 6 (TI : mm ⁶)
IOTA	Character		ı		Characters	Character ı (Fontcode : 0399 ₁₆ ; Info : press [▼] for ı at [α...ω.1] fF4)
iota	Character		ι		Characters	Character ι (Fontcode : 03B9 ₁₆ ; Info : press [▲] for ι at [A...Ω.1] fF4)
IOTA dialytika	Character		ϊ		Characters	Character ϐ (Fontcode : 03AA ₁₆ ; Info : press [▼] for ϐ at [α...ω.3] F1)
iota dialytika	Character		ι̇		Characters	Character ϐ̇ (Fontcode : 03CA ₁₆ ; Info : press [▲] for ϐ̇ at [A...Ω.3] F1)
iota dialytika tonos	Character		ϊ̇		Characters	Character ϐ̇ (Fontcode : 0390 ₁₆)
iota tonos	Character		ι̇		Characters	Character ϐ̇ (Fontcode : 03AF ₁₆)
IP first group extension	Setting (pgm)	0	IPGRP1x	IPGRP1x ₀	Display	Allow the first group to the left of the radix to contain one more digit (up to 1-9) than the number of digits specified by IPGRP1 ; a value of 0 means this setting is ignored (IPGRP1 is followed) (TAM : IPGRP1x _ TamNonReg menu ; Info : e.g. with first group size set to 3 and extension set to 2, up to a value of 2999 the digits remain grouped (without separator), but 3 000 and higher will not (separator space is assumed here))
IP first group size	Setting (pgm)	0	IPGRP1	IPGRP1 ₀	Display	Set number of digits of the first group to the left of the radix to be different from IPGRP ; a value of 0 means this setting is ignored (IPGRP is followed) (TAM : IPGRP1 _ TamNonReg menu)
IP group size	Setting (pgm)	3	IPGRP	IPGRP ₃	Display	Set integer part group size (2-9 digits) ; not for SCI or ENG notation (TAM : IPGRP _ TamNonReg menu)
IP separator <none>	Setting (pgm)	OFF	NONE	INONE 0	Display	Set integer part separator to <none> (Info : Menu shows symbol ø)
IP separator comma	Setting (pgm)	OFF	COM,	ICOM, 0	Display	Set integer part separator to comma
IP separator dot	Setting (pgm)	OFF	DOT.	IDOT. 0	Display	Set integer part separator to dot
IP separator double space	Setting (pgm)	OFF	WSPC.	IWSPC. 0	Display	Set integer part separator to double space
IP separator narrow space	Setting (pgm)	OFF	NSPC.	INSPC. 0	Display	Set integer part separator to narrow space
IP separator narrow tick	Setting (pgm)	OFF	TICK'	ITICK' 0	Display	Set integer part separator to narrow tick
IP separator period	Setting (pgm)	OFF	PER.	IPER. 0	Display	Set integer part separator to period
IP separator space	Setting (pgm)	ON	SPC.	ISPC. 0	Display	Set integer part separator to space
IP separator tick	Setting (pgm)	OFF	WTICK'	IWTICK' 0	Display	Set integer part separator to tick

FullName	Type	Default	Label	Catalog	Category	Extended description
IP separator underscore	Setting (pgm)	OFF	UNDR	IUNDR ○	Display	Set integer part separator to underscore
IP separator wide comma	Setting (pgm)	OFF	WCOM	IWCOM ○	Display	Set integer part separator to wide comma
IP separator wide dot	Setting (pgm)	OFF	WDOT	IWDOT ○	Display	Set integer part separator to wide dot
IP separator wide period	Setting (pgm)	OFF	WPER	IWPER ○	Display	Set integer part separator to wide period
Irrational fractions mode	Setting	OFF	IRFRAC	IRFRAC □	Fractions	Switch on irrational fractions mode ; not programmable - in PEM, use flag IRFRAC (Info : IRFRAC and FRACT are linked (both cannot be ON at the same time ; SBI ×I or ·I indicates that approximate multiples or fractions can be used, of the irrational numbers $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$, $\sqrt{7}$, ϕ , π^{-2} , π^{-1} , $\sqrt{\pi}$, π , π^2 , e^{-2} , e^{-1} , e and e^2 (with tolerance 10^{-24}) ; Prefix $\approx$ + <approximation> ; multiplication symbol SET for displaying multiplication symbol ×; CLEAR for displaying multiplication symbol · or SET for displaying multiplication symbol ×; CLEAR for displaying multiplication symbol · according to flag MULT× ; SBI $\approx$ indicates FDIGS < 34; SBI is shown if flag SBfrac is SET ; exit fraction modes by .d or CLRMOD (longerpress [EXIT]))
Irrational fractions mode	Flag	CLEAR	IRFRAC		Fractions	SET for irrational fractions mode; CLEAR for irrational fractions mode inactive ; IRFRAC gives fractional results only if a simple fraction exists ; on battery power, matrices and vectors are ignored to prevent heavy calculations (Info : IRFRAC and FRACT are linked (both cannot be SET at the same time) ; SBI ×I or ·I indicates that approximate multiples or fractions can be used, of the irrational numbers $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$, $\sqrt{7}$, ϕ , π^{-2} , π^{-1} , $\sqrt{\pi}$, π , π^2 , e^{-2} , e^{-1} , e and e^2 (with tolerance 10^{-24}) ; Prefix $\approx$ + <approximation> ; multiplication symbol SET for displaying multiplication symbol ×; CLEAR for displaying multiplication symbol · or SET for displaying multiplication symbol ×; CLEAR for displaying multiplication symbol · according to flag MULT× ; SBI $\approx$ indicates FDIGS < 34; SBI is shown if flag SBfrac is SET ; exit fraction modes by .d or CLRMOD (longerpress [EXIT]))
Irrational fractions mode preferred	Flag (system)	CLEAR	IRFR		Fractions	SET for irrational fractions mode preferred; CLEAR for irrational fractions mode not preferred (Info : IRFR is SET by IRFRAC and CLEARED by FRACT to preserve state when toggling fraction modes using a b/c and .d)
Irrational I	Character		I		Characters	Character I (Fontcode : 2110 ₁₆)
ISO Week of Year rule	Setting (pgm)	ON	WOYISO	WOYISO	Time functions	Set Week of Year rule to ISO ; week starts on Monday and week number depends on the first Thursday ; returns 1.4 (TI : Week of Year rule set: Monday.Thursday ; Info : SBI Ww#-d# is shown if flag SBwoy is SET)
Iteration monitoring	Flag	SET	MONIT		Status	SET for displaying iteration status; CLEAR for not displaying iteration status (Info : Pertains to executing programmable sums, solvers and integrator)
J	Character		J		Characters	Character J (Fontcode : 004A ₁₆) ; Keyboard alpha [SIN]
j	Character		j		Characters	Character j (Fontcode : 006A ₁₆) ; Keyboard alpha f [SIN]
j circumflex	Character		ĵ		Characters	Character ĵ (Fontcode : 0135 ₁₆)
J to Btu	Function (monadic, linked)		J→Btu		Energy conversions	Convert Joule to British Thermal Unit (TI : Btu:)
J to cal	Function (monadic, linked)		J→cal		Energy conversions	Convert Joule to calorie (TI : cal:)
J to erg	Function (monadic, linked)		J→erg		Energy conversions	Convert Joule to erg (TI : erg:)
J to eV	Function (monadic, linked)		J→eV		Energy conversions	Convert Joule to electronvolt (TI : eV:)
J to foe	Function (monadic, linked)		J→foe		Energy conversions	Convert Joule to foe (TI : foe:)
J to Wh	Function (monadic, linked)		J→Wh		Energy conversions	Convert Joule to Watt-hour (TI : Wh:)
Jacobi's Zeta	Function (dyadic)		Z(φ,m)	Z(φ,m)	Mathematics	Jacobi's Zeta (Parameter : φ = X ; m = Y ; Info : φ is amplitude angle (any angle mode))
Japanese formatting	Setting (pgm)	OFF	JAPAN	S.JPN ◇	Display	Set to Japanese regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 1873-01-01 ; Week of Year rule set: Sunday.Saturday)
jīn to kg	Function (monadic, linked)		jīn→kg		Mass conversions	Convert jīn to kilogram (TI : kg:)
Josephson constant	Constant		K _J		Constants	Constant # 22 K _J c.josephsn = +4.835978484169836324476582850545281 × 10 ¹⁴ (Unit : Hz/V)
Julian day number to date-time	Command		J→DT	J→DT	Time functions	Convert Julian day number (JDN) to date in Y and time in X (Info : Years are astronomical, 0 equals 1 BCE ; JDN .0 equals noon!)
Julian-Gregorian transition 1582	Setting (pgm)		JG.1582	JG.1582	Time functions	Set Julian-Gregorian transition date to 1582-10-15 (Info : First Gregorian day set: 1582-10-15)

FullName	Type	Default	Label	Catalog	Category	Extended description
Julian-Gregorian transition 1752	Setting (pgm)		JG.1752	JG.1752	Time functions	Set Julian-Gregorian transition date to 1752-09-14 (Info : First Gregorian day set: 1752-09-14)
Julian-Gregorian transition 1873	Setting (pgm)		JG.1873	JG.1873	Time functions	Set Julian-Gregorian transition date to 1873-01-01 (Info : First Gregorian day set: 1873-01-01)
Julian-Gregorian transition 1949	Setting (pgm)		JG.1949	JG.1949	Time functions	Set Julian-Gregorian transition date to 1949-10-01 (Info : First Gregorian day set: 1949-10-01)
K	Character		K		Characters	Character K (Fontcode : 004B ₁₆) ; Keyboard alpha [COS]
k	Character		k		Characters	Character k (Fontcode : 006B ₁₆) ; Keyboard alpha f [COS]
k circumflex	Character		ķ		Characters	Character ķ (Fontcode : 0137 ₁₆)
K to °C	Function (monadic, linked)		K→°C		Temperature conversions	Convert Kelvin to degrees Celsius (TI : °C)
K to °F	Function (monadic, linked)		K→°F		Temperature conversions	Convert Kelvin to degrees Fahrenheit (TI : °F)
K to °R	Function (monadic, linked)		K→°R		Temperature conversions	Convert Kelvin to degrees Rankine (TI : °R)
K to eV/k _B	Function (monadic, linked)		K→eV/k _B		Temperature conversions	Convert Kelvin to electronvolt/Boltzmann constant (TI : eV/k _B)
KAPPA	Character		K		Characters	Character K (Fontcode : 039A ₁₆ ; Info : press [▼] for κ at [α...ω.1]fF5)
kappa	Character		κ		Characters	Character κ (Fontcode : 03BA ₁₆ ; Info : press [▲] for K at [A...Ω.1]fF5)
Key	Command (PEM)		KEY		Programming	Used in Program Entry Mode to specify soft button (1-18) of the Programmable MENU, forming program step for KEYG → KEY nn GT0 ; KEYX → KEY nn XEQ (TAM : KEY __ TamKey menu)
Key (42)	Command (42, PEM)		42KEY		Compatibility	Used in Program Entry Mode to specify soft button (1-18) of the Programmable MENU, forming program step for 42KEYG → 42KEY nn GT0 ; 42KEYX → 42KEY nn XEQ (TAM : 42KEY __ TamKey menu)
Key Execute	Command (PEM)		KEYX	KEYX	Programming	Used in Program Entry Mode to specify the program to execute when soft button (1-18) of the Programmable MENU, [▲] (19), [▼] (20) or [EXIT] (21) is pressed ; if button 1-18 is specified, KEYX also creates a soft button in the Programmable MENU with the string in X as a label (TAM : KEYX → KEY __ TamKey menu ; KEY nn XEQ __ TamLabel menu)
Key Execute (42)	Command (42, PEM)		42KEYX	42KEYX	Compatibility	Used in Program Entry Mode to specify the program to execute when soft button (1-18) of the Programmable MENU, [▲] (19), [▼] (20) or [EXIT] (21) is pressed ; if button 1-18 is specified, 42KEYX also creates a soft button in the Programmable MENU with the string in the Alpha register (default K) as a label (TAM : 42KEYX → 42KEY __ TamKey menu ; 42KEY nn XEQ __ TamLabel menu)
Key Go to	Command (PEM)		KEYG	KEYG	Programming	Used in Program Entry Mode to specify the label to go to when soft button (1-18) of the Programmable MENU, [▲] (19), [▼] (20) or [EXIT] (21) is pressed ; if button 1-18 is specified, KEYG also creates a soft button in the Programmable MENU with the string in X as a label (TAM : KEYG → KEY __ TamKey menu ; KEY nn GT0 __ TamLabel menu)
Key Go to (42)	Command (42, PEM)		42KEYG	42KEYG	Compatibility	Used in Program Entry Mode to specify the label to go to when soft button (1-18) of the Programmable MENU, [▲] (19), [▼] (20) or [EXIT] (21) is pressed ; if button 1-18 is specified, 42KEYG also creates a soft button in the Programmable MENU with the string in the Alpha register (default K) as a label (TAM : 42KEYG → 42KEY __ TamKey menu ; 42KEY nn GT0 __ TamLabel menu)
Key pressed?	Command (logical, PEM)		KEY?	KEY?	Programming	Test key was pressed : if it is NOT pressed, the next program step will be executed and if it IS pressed, the next program step will be skipped and the keycode is stored in the register specified ; keycode range is 11-85, where the first digit is row, second digit is column number (TAM : KEY? __ Tam menu ; Info : KEY? should not to be used in short loops, keeps calculator running on full power ; [R/S] and [EXIT] interrupt a program and KEY? will not work for those keys ; Ref : https://47calc.com/doc/C47/Reference/C47_KeyType.pdf)
Key type?	Command (logical)		KTYP	KTYP	Programming	Get key type for key code returned by KEY? (TAM : KTYP __ Tam menu ; Info : https://47calc.com/doc/C47/Reference/C47_KeyType.pdf)

FullName	Type	Default	Label	Catalog	Category	Extended description
Keyboard map	Browser		KEYMAP	KEYMAP	Catalog	Browse keyboard map (default USER mode) ; also showing special NORMAL hotkey assignment from menu Σ + KEY ; if KEYMAP is activated when in Alpha Input Mode or Equation Input Mode, the alpha keyboard mappings are shown only (default NORMAL mode, starting with alpha g-shift) (Info : Press and hold key [.] to view USER or NORMAL (STD) keys ; browse using [▲] and [▼] ; press [EXIT] to exit Keyboard map ; Ref : https://47calc.com/doc/C47/Reference/C47_KEYMAP.pdf)
Keyboard reset	Command		KEYS.R		Cleanup	Clean (delete) all key assignments , including the Normal Mode assignment (if any) to key Σ + (TI : Key assignments cleaned ; Info : the Normal Mode key assignment can be set in menu Σ + KEY if the calculator layout allows it)
Keys	MENU		[KEYS]	KEYS	Customisation	Layouts, ribbons and special key assignments (Ref : https://47calc.com/doc/C47/Reference/C47_Keyboards_side_by_side.pdf) ; Keyboard g[1] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_KEYS_page_1.pdf
kg to blob	Function (monadic, linked)		kg→blob		Mass conversions	Convert kilogram to blob ; this is the same conversion as kg→lbf-s²/in on [Mass:2] gF4 (TI : blob:)
kg to cwt	Function (monadic, linked)		kg→cwt		Mass conversions	Convert kilogram to hundredweight (TI : cwt:)
kg to fir	Function (monadic, linked)		kg→fir		Mass conversions	Convert kilogram to firkin (TI : fir:)
kg to jin	Function (monadic, linked)		kg→jin		Mass conversions	Convert kilogram to jin (TI : jin:)
kg to lbf-s²/ft	Function (monadic, linked)		kg→lbf-s²/ft		Mass conversions	Convert kilogram to lbf-s²/ft (slug) ; this is the same conversion as kg→slug on [Mass:1] gF2 (TI : lbf-s²/ft: ; Info : single = bf-s²/ft←)
kg to lbf-s²/in	Function (monadic, linked)		kg→lbf-s²/in		Mass conversions	Convert kilogram to lbf-s²/in (slinch or blob) ; this is the same conversion as kg→slinch on [Mass:1] gF4 (TI : lbf-s²/in: ; Info : single = bf-s²/in←)
kg to lbs	Function (monadic, linked)		kg→lbs		Mass conversions	Convert kilogram to pound (TI : lbs:)
kg to liǎng	Function (monadic, linked)		kg→liǎng		Mass conversions	Convert kilogram to liǎng (TI : liǎng:)
kg to long ton	Function (monadic, linked)		kg→long ton		Mass conversions	Convert kilogram to long ton (TI : long ton: ; Info : single = ng ton←)
kg to short cwt	Function (monadic, linked)		kg→short cwt		Mass conversions	Convert kilogram to short hundredweight (TI : short cwt: ; Info : single = rt cwt←)
kg to short ton	Function (monadic, linked)		kg→short ton		Mass conversions	Convert kilogram to short ton (TI : short ton: ; Info : single = rt ton←)
kg to slinch	Function (monadic, linked)		kg→slinch		Mass conversions	Convert kilogram to slinch ; this is the same conversion as kg→lbf-s²/in on [Mass:2] gF4 (TI : slinch:)
kg to slug	Function (monadic, linked)		kg→slug		Mass conversions	Convert kilogram to slug ; this is the same conversion as kg→lbf-s²/ft on [Mass:2] gF2 (TI : slug:)
kg to stone	Function (monadic, linked)		kg→stone		Mass conversions	Convert kilogram to stone (TI : stone:)
kg to tonne	Function (monadic, linked)		kg→tonne		Mass conversions	Convert kilogram to metric tonne (TI : tonne:)
kg/m to lbs/ft	Function (monadic, linked)		kg/m→lbs/ft		Fixed pair conversions	Convert kilogram per metre to pound per foot (TI : lbs/ft:)
kg/m³ to blob/in³	Function (monadic, linked)		kg/m³→blob/in³		Density conversions	Convert kilogram per cubic metre to blob per cubic inch (TI : blob/in³: ; Info : single = lob/in³←)
kg/m³ to lbs/in³	Function (monadic, linked)		kg/m³→lbs/in³		Density conversions	Convert kilogram per cubic metre to pound per cubic inch (TI : lbs/in³:)
kg/m³ to t/mm³	Function (monadic, linked)		kg/m³→t/mm³		Density conversions	Convert kilogram per cubic metre to metric tonne per cubic millimetre (TI : t/mm³:)
kgf to lbf	Function (monadic, linked)		kgf→lbf		Force conversions	Convert kilogram force to pound force (TI : lbf:)
kgf to N	Function (monadic, linked)		kgf→N		Force conversions	Convert kilogram force to Newton (TI : N:)
kgf/m to N/m	Function (monadic, linked)		kgf/m→N/m		Linear Force Density conversions	Convert kilogram force per metre to Newton per metre (TI : N/m:)
Khinchin constant	Constant		K ₀		Constants	Constant # 57 K ₀ c.khinchin = +2.685452001065306445309714835481796
kilo	Command (nonpgm)		-k		Numeric input	Factor 10³
Kilo binary	Command (nonpgm)		-Ki		Numeric input	Factor 10¹⁰
km to mi	Function (monadic, linked)		km→mi		Distance conversions	Convert kilometre to mile (TI : mi:)
km to nmi	Function (monadic, linked)		km→nmi		Distance conversions	Convert kilometre to nautical mile (TI : nmi:)
km/h to ft/s	Function (monadic, linked)		km/h→ft/s		Speed conversions	Convert kilometre per hour to foot per second (TI : ft/s:)
km/h to fur/ftn	Function (monadic, linked)		km/h→fur/ftn		Speed conversions	Convert kilometre per hour to furlong per fortnight (TI : fur/ftn: ; Info : single = ur/ftn←)
km/h to knot	Function (monadic, linked)		km/h→knot		Speed conversions	Convert kilometre per hour to knot (TI : knot:)
km/h to m/s	Function (monadic, linked)		km/h→m/s		Speed conversions	Convert kilometre per hour to metre per second (TI : m/s:)
km/h to mph	Function (monadic, linked)		km/h→mph		Speed conversions	Convert kilometre per hour to mile per hour (TI : mph:)
km/kWh to kWh/l ₁₀₀ km	Function (monadic, linked)		km/kWh→kWh/l ₁₀₀ km		EV economy conversions	Convert kilometre per kilowatt-hour to kilowatt-hour per 100 kilometre (TI : kWh/100km: ; Info : single = E/l ₁₀₀ km←)
km/l to l/l ₁₀₀ km	Function (monadic, linked)		km/l→l/l ₁₀₀ km		Fuel economy conversions	Convert kilometre per litre to litre per 100 kilometre (TI : l/100km:)

FullName	Type	Default	Label	Catalog	Category	Extended description
km/ℓ _e to kWh/l ₁₀₀ km	Function (monadic, linked)		km/ℓ _e →kWh/l ₁₀₀ km		EV economy conversions	Convert kilometre per litre equivalent to kiloWatt-hour per 100 kilometre (TI : kWh/100km; Info : single = E/l ₁₀₀ km↔)
km ² to ha	Function (monadic, linked)		km ² →ha		Area conversions	Convert square kilometre to hectare (TI : ha;)
km ² to mi ²	Function (monadic, linked)		km ² →mi ²		Area conversions	Convert square kilometre to square mile (TI : mi ² ;)
km ² to nmi ²	Function (monadic, linked)		km ² →nmi ²		Area conversions	Convert square kilometre to square nautical mile (TI : nmi ² ;)
knot to km/h	Function (monadic, linked)		knot→km/h		Speed conversions	Convert knot to kilometre per hour (TI : km/h;)
knot to m/s	Function (monadic, linked)		knot→m/s		Speed conversions	Convert knot to metre per second (TI : m/s;)
knot to mph	Function (monadic, linked)		knot→mph		Speed conversions	Convert knot to mile per hour (TI : mph;)
KOPPA	Character		0		Characters	Character 0 (Fontcode : 03D8 ₁₆ ; Info : press [▼] for 0 at [α...ω.1]gF6)
koppa	Character		q		Characters	Character q (Fontcode : 03D9 ₁₆ ; Info : press [▲] for 0 at [α...Ω.1]gF6)
ksi to MPa	Function (monadic, linked)		ksi→MPa		Pressure conversions	Convert kilo-pound force per square inch to MegaPascal (TI : MPa;)
kWh/l ₁₀₀ km to km/kWh	Function (monadic, linked)		kWh/l ₁₀₀ km→km/kWh		EV economy conversions	Convert kiloWatt-hour per 100 kilometre to kilometre per kiloWatt-hour (TI : km/kWh; Info : single = km/E↔)
kWh/l ₁₀₀ km to km/ℓ _e	Function (monadic, linked)		kWh/l ₁₀₀ km→km/ℓ _e		EV economy conversions	Convert kiloWatt-hour per 100 kilometre to kilometre per litre equivalent (TI : km/ℓ _e ;)
kWh/l ₁₀₀ km to kWh/l ₁₀₀ mi	Function (monadic, linked)		kWh/l ₁₀₀ km→kWh/l ₁₀₀ mi		EV economy conversions	Convert kiloWatt-hour per 100 kilometre to kiloWatt-hour per 100 mile (TI : kWh/100mi; Info : single = E/l ₁₀₀ mi↔)
kWh/l ₁₀₀ mi to kWh/l ₁₀₀ km	Function (monadic, linked)		kWh/l ₁₀₀ mi→kWh/l ₁₀₀ km		EV economy conversions	Convert kiloWatt-hour per 100 mile to kiloWatt-hour per 100 kilometre (TI : kWh/100km; Info : single = E/l ₁₀₀ km↔)
kWh/l ₁₀₀ mi to mi/kWh	Function (monadic, linked)		kWh/l ₁₀₀ mi→mi/kWh		EV economy conversions	Convert kiloWatt-hour per 100 mile to mile per kiloWatt-hour (TI : mi/kWh; Info : single = mi/E↔)
kWh/l ₁₀₀ mi to mpge _{UK}	Function (monadic, linked)		kWh/l ₁₀₀ mi→mpge _{UK}		EV economy conversions	Convert kiloWatt-hour per 100 mile to mpg gasoline equivalent UK (TI : mpge _{UK} ;)
kWh/l ₁₀₀ mi to mpge _{US}	Function (monadic, linked)		kWh/l ₁₀₀ mi→mpge _{US}		EV economy conversions	Convert kiloWatt-hour per 100 mile to mpg gasoline equivalent US (TI : mpge _{US} ;)
L	Character		L		Characters	Character L (Fontcode : 004C ₁₆) ; Keyboard alpha [TAN]
l	Character		l		Characters	Character l (Fontcode : 006C ₁₆) ; Keyboard alpha f[TAN]
L accute	Character		Ĺ		Characters	Character Ĺ (Fontcode : 0139 ₁₆ ; Info : press [▼] for Ĺ at [aintl.2]gF4)
l accute	Character		ĺ		Characters	Character ĺ (Fontcode : 013A ₁₆ ; Info : press [▲] for ĺ at [αINTL.2]gF4)
L apostrophe	Character		Ľ		Characters	Character Ľ (Fontcode : 013D ₁₆ ; Info : press [▼] for Ľ at [aintl.2]gF5)
l apostrophe	Character		ľ		Characters	Character ľ (Fontcode : 013E ₁₆ ; Info : press [▲] for ľ at [αINTL.2]gF5)
l stoke	Character		℥		Characters	Character ℥ (Fontcode : 0142 ₁₆ ; Info : press [▲] for ℥ at [αINTL.2]gF6)
L stoke	Character		℥		Characters	Character ℥ (Fontcode : 0141 ₁₆ ; Info : press [▼] for ℥ at [aintl.2]gF6)
ℓ to ft ³	Function (monadic, linked)		ℓ→ft ³		Volume conversions	Convert litre to cubic foot (TI : ft ³ ;)
ℓ to gal _{UK}	Function (monadic, linked)		ℓ→gal _{UK}		Volume conversions	Convert litre to UK gallon (TI : gal _{UK} ;)
ℓ to gal _{US}	Function (monadic, linked)		ℓ→gal _{US}		Volume conversions	Convert litre to US gallon (TI : gal _{US} ;)
ℓ to qt _{UK}	Function (monadic, linked)		ℓ→qt _{UK}		Volume conversions	Convert litre to UK quart (TI : qt _{UK} ;)
ℓ to qt _{US}	Function (monadic, linked)		ℓ→qt _{US}		Volume conversions	Convert litre to US quart (TI : qt _{US} ;)
ℓ/l ₁₀₀ km to km/ℓ	Function (monadic, linked)		ℓ/l ₁₀₀ km→km/ℓ		Fuel economy conversions	Convert litre per 100 kilometre to kilometre per litre (TI : km/ℓ;)
ℓ/l ₁₀₀ km to mpg _{UK}	Function (monadic, linked)		ℓ/l ₁₀₀ km→mpg _{UK}		Fuel economy conversions	Convert litre per 100 kilometre to mile per gallon UK (TI : mpg _{UK} ;)
ℓ/l ₁₀₀ km to mpg _{US}	Function (monadic, linked)		ℓ/l ₁₀₀ km→mpg _{US}		Fuel economy conversions	Convert litre per 100 kilometre to mile per gallon US (TI : mpg _{US} ;)
Label	Command (PEM)		LBL	LBL	Programming	Create global or local label ; create global label by pressing key α (f[XEQ]) and entering the name, which will be displayed as '<label>' ; local labels only exist within the scope of the program ; they are numeric : 01-99, single letter : a-l or {A}-{E}, F, {G}-{L} ; or created as local named labels, by pressing button : ([TamLabel.1]F3), then button α ([TamLocalLabel.1]F3) or key α (f[XEQ]) and entering the name, which will be displayed as '<label>' ; maximum label length is : 7 characters (TAM : LBL __ TamLabel menu ; Info : LBL + TAM [XEQ] to enter global LBL '_. TamAlpha menu ; LBL + button : on [TamLabel.1]F3 to enter LBL :__ TamLocalLabel menu to create local labels a-l, D-F or local named labels (additionally pressing button α on [TamLocalLabel.1]F3 or TAM [XEQ] to enter LBL :. TamAlpha menu) ; note that a label may be used multiple times in a program ; local labels are searched forwards from the GT0 or XEQ command, before global labels, which are searched from the start of program memory) ; Keyboard g[LN]
Label exists?	Command (logical)		LBL?	LBL?	Programming	Test label exists (TAM : LBL? __ TamLabel menu)
Laguerre generalised polynomials	Function (triadic)		L _m ^(α)	L _m ^(α)	Mathematics	Laguerre generalised polynomials (Parameter : x = X ; m = Y ; α = Z)
Laguerre polynomials	Function (dyadic)		L _m	L _m	Mathematics	Laguerre polynomials (Parameter : x = X ; m = Y)
Lambert's W function (negative)	Function (monadic)		W _m	W _m	Mathematics	Lambert's W function (negative branch) ; m = minus -- see http://en.wikipedia.org/wiki/Lambert_W_function

FullName	Type	Default	Label	Catalog	Category	Extended description
Lambert's W function (principal)	Function (monadic)		W _p	W _p	Mathematics	Lambert's W function (principal branch) -- see http://mathworld.wolfram.com/LambertW-Function.html
LAMDA	Character		Λ		Characters	Character Λ (Fontcode : 03B8 ₁₆ ; Info : press [▼] for λ at [α...ω.1] fF6)
lamda	Character		λ		Characters	Character λ (Fontcode : 03BB ₁₆ ; Info : press [▲] for Λ at [A...Ω.1] fF6)
Landé's electron g-factor	Constant		g _e		Constants	Constant # 16 g _e gfact.elec = -2.00231930436092
Large Long integers display	Setting	ON	dLrgLI	dLrgLI	Display	Switch on (large) Long integers to always display in large text ; not programmable - in PEM, use flag dLrgLI (Info : dLrgLI is overruled by dZ.0)
Large Long integers display	Flag	SET	dLrgLI		Display	SET for (large) Long integers to always display in large text ; CLEAR for (large) Long integers to display in small text (Info : dLrgLI is overruled by dZ.0)
Last error	Command		LSTERR	LSTERR	Information	Retain error code of last function or command executed ; returns 0 for no error (Ref : https://47calc.com/doc/C47/Reference/C47_Errors_and_messages.pdf ; Info : returns error code even when IGN1ER (Ignore one error) is SET)
Last Payment number	Command	12	P2	P2 12	Financial	Set last payment number in the range (integer, P1 ≤ P2 ≤ n) (TI : To period P2 :))
Last statefile loaded	Command		STATE	STATE	Input-Output	Get name of last full statefile or backup loaded from STATE/<state>.sav, SAVFILES/C47.sav or SAVFILES/C47auto.sav (TI : Last full state file loaded: <date>: <file>)
Last Ticks	Command		LASTT	LASTT	System	Get number of ticks for the previous operation (command, function, program) (Info : One tick is 100 ms)
Last X	Command		LASTx	LASTx	Stack	Recall last X (Register L) ; Keyboard f[xzy]
lbf to kgf	Function (monadic, linked)		lbf→kgf		Force conversions	Convert pound force to kilogram force (TI : kgf:)
lbf to N	Function (monadic, linked)		lbf→N		Force conversions	Convert pound force to Newton (TI : N:)
lbf-s ² /ft to kg	Function (monadic, linked)		lbf-s ² /ft→kg		Mass conversions	Convert lbf-s ² /ft (slug) to kilogram ; this is the same conversion as slug→kg on [Mass:1] gF1 (TI : kg:)
lbf-s ² /in to kg	Function (monadic, linked)		lbf-s ² /in→kg		Mass conversions	Convert lbf-s ² /in (slinch or blob) to kilogram ; this is the same conversion as slinch→kg on [Mass:1] gF3 (TI : kg:)
lbf/ft to N/m	Function (monadic, linked)		lbf/ft→N/m		Linear Force Density conversions	Convert pound force per foot to Newton per metre (TI : N/m:)
lbf/ft ² to Pa	Function (monadic, linked)		lbf/ft ² →Pa		Pressure conversions	Convert pound force per square foot to Pascal (TI : Pa:)
lbs to fir	Function (monadic, linked)		lbs→fir		Mass conversions	Convert pound to firkin (TI : fir:)
lbs to kg	Function (monadic, linked)		lbs→kg		Mass conversions	Convert pound to kilogram (TI : kg:)
lbs/ft to kg/m	Function (monadic, linked)		lbs/ft→kg/m		Fixed pair conversions	Convert pound per foot to kilogram per metre (TI : kg/m:)
lbs/in ³ to blob/in ³	Function (monadic, linked)		lbs/in ³ →blob/in ³		Density conversions	Convert pound per cubic inch to blob per cubic inch (TI : blob/in ³ ; Info : single = lob/in ³ ←)
lbs/in ³ to kg/m ³	Function (monadic, linked)		lbs/in ³ →kg/m ³		Density conversions	Convert pound per cubic inch to kilogram per cubic metre (TI : kg/m ³ :)
lbs/in ³ to t/mm ³	Function (monadic, linked)		lbs/in ³ →t/mm ³		Density conversions	Convert pound per cubic inch to metric tonne per cubic millimetre (TI : t/mm ³ :)
Leading zeros	Setting	OFF	LEAD.0	LEAD.0	Display	Switch on leading zeros (shortint bases 2, 4, 8, 16) ; not programmable - in PEM, use flag LEAD.0
Leading zeros	Flag	CLEAR	LEAD.0		Display	SET for leading zeros (shortint bases 2, 4, 8, 16) ; CLEAR for no leading zeros (shortint bases 2, 4, 8, 16)
Leap year?	Command (logical)		LEAP?	LEAP?	Programming	Test X is a date in a leap year (test function 0? must be true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Least common multiple	Function (dyadic)		LCM	LCM	Integers	Least common multiple of X and Y
Left arrow	Character		←		Characters	Character ← (Fontcode : 21E0 ₁₆)
Left bit mask	Function (monadic)		MASKL	MASKL	Bits and bytes	Set left n bits to use as mask (TAM : MASKL __ TamNonReg menu)
Left block arrow	Character		↔		Characters	Character ↔ (Fontcode : 2B60 ₁₆)
Left curly bracket	Character		{		Characters	Character { (Fontcode : 007B ₁₆)
Left double quotation mark	Character		“		Characters	Character “ (Fontcode : 201C ₁₆)
Left French quotation mark	Character		«		Characters	Character « (Fontcode : 00AB ₁₆)
Left justify	Function (monadic)		LJ	LJ	Bits and bytes	Left justify (within word size) ; returns shift in X and result in Y
Left parenthesis	Symbol		(		Mathematics and characters	Open (left) parenthesis (Fontcode : 0028 ₁₆)
Left righr double arrow	Character		↔		Characters	Character ↔ (Fontcode : 21D4 ₁₆)
Left right arrow	Character		↗		Characters	Character ↗ (Shortcut : alpha g[xzy] ; Info : Fontcode : 21C4 ₁₆)
Left right arrow	Character		↘		Characters	Character ↘ (Fontcode : 2194 ₁₆)
Left single quotation mark	Character		'		Characters	Character ' (Fontcode : 2018 ₁₆)
Left square bracket	Character		[		Characters	Character [(Fontcode : 005B ₁₆)
Legendre polynomials	Function (dyadic)		P _n	P _n	Mathematics	Legendre polynomials (Parameter : x = X ; n = Y)

FullName	Type	Default	Label	Catalog	Category	Extended description
Len2	User Program		Len2		Test programs	Len2 test program, available to load from PROGRAMS/ALLPGMS/Len2.p47, using READP (after unzipping resources/testPgms.zip)
Len3	User Program		Len3		Test programs	Len3 test program, available to load from PROGRAMS/ALLPGMS/Len3.p47, using READP (after unzipping resources/testPgms.zip)
Len4	User Program		Len4		Test programs	Len4 test program, available to load from PROGRAMS/ALLPGMS/Len4.p47, using READP (after unzipping resources/testPgms.zip)
Len5	User Program		Len5		Test programs	Len5 test program, available to load from PROGRAMS/ALLPGMS/Len5.p47, using READP (after unzipping resources/testPgms.zip)
Len6	User Program		Len6		Test programs	Len6 test program, available to load from PROGRAMS/ALLPGMS/Len6.p47, using READP (after unzipping resources/testPgms.zip)
Len7	User Program		Len7		Test programs	Len7 test program, available to load from PROGRAMS/ALLPGMS/Len7.p47, using READP (after unzipping resources/testPgms.zip)
Len8	User Program		Len8		Test programs	Len8 test program, available to load from PROGRAMS/ALLPGMS/Len8.p47, using READP (after unzipping resources/testPgms.zip)
Length conversions	MENU		[Length:]	Length:	Distance conversions	Convert between units of length (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons; CLEAR for <from> → ← <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Length_page_1.pdf
Less or equal than	Character		≤		Characters	Character ≤ (Fontcode : 226 ₁₆)
Less than	Character		<		Characters	Character < (Fontcode : 003C ₁₆)
lǐ to m	Function (monadic, linked)		lǐ→m		Distance conversions	Convert lǐ to metre (TI : m)
liǎng to kg	Function (monadic, linked)		liǎng→kg		Mass conversions	Convert liǎng to kilogram (TI : kg)
Linear fit	Setting	ON	LinF	LinF	Plotting and curve fitting	Set <BestF> to include Linear curve fitting : $y = a_0 + a_1x$; deselects OrthoF (Info : Adds 1 to <BestF> ; TI : L.R. selected to <BestF>.)
Linear interpolation	Function (triadic)		LINPOL	LINPOL	Mathematics	Linear interpolation ; also works for Complex numbers and Dates (Info : <from> ENTER <to> ENTER <at> (fraction) LINPOL)
Linear Regression	Command		L.R.	L.R.	Plotting and curve fitting	Calculate all selected regression models, and select the one with the best coefficient of fit model correlation (r) (TI : <model>* $a_2 =$; $y = a_1 =$; <formula> $a_0 =$)
LISSAJ	User Program		LISSAJ		Test programs	LISSAJ test program, available to load from PROGRAMS/ALLPGMS/LISSAJ.p47, using READP (after unzipping resources/testPgms.zip)
List	Character		≡		Characters	Character ≡ (Fontcode : 21CC ₁₆)
List graph coordinates	Command		LISTXY		Plotting	List the actual STATS graph coordinates (7 digit floating point)
Litre	Character		ℓ		Characters	Character ℓ (Fontcode : 2113 ₁₆)
LN(1+x)	Function (monadic)		LN(1+x)	LN(1+x)	Mathematics	More accurate calculation of LN(1+x) for $x \approx 0$
Load full backup	Command (nonpgm)		LOAD	LOAD	Input-Output	Load full backup from SAVE file SAVFILES/C47.sav in FAT and auto-clear USER mode ; key assignments will be ignored when loading from a backup file created on a different model (C47 versus R47 and vice versa) (TI : Backup restored + <version info> ; Directory : SAVFILES/)
Load programs	Command (nonpgm)		LOADP	LOADP	Input-Output	Load programs from SAVE file SAVFILES/C47.sav in FAT (TI : Programs and equations loaded ; appended ; Directory : SAVFILES/)
Load registers	Command (nonpgm)		LOADR	LOADR	Input-Output	Load registers from SAVE file SAVFILES/C47.sav in FAT (TI : Global and local registers loaded ; (w/ local flags ; Directory : SAVFILES/)
Load Sigma registers	Command (nonpgm)		LOADΣ	LOADΣ	Input-Output	Load Sigma registers from SAVE file SAVFILES/C47.sav in FAT (TI : Loading stats ... ; Statistical data loaded ; Directory : SAVFILES/)
Load state	Command (nonpgm)		LOADST	LOADST	Input-Output	Load state from SAVEST backup file (.s47) in FAT and clear USER mode ; if full state, presenting "WARNING: Current calculator state will be lost. Press [ENTER] to confirm." ; key assignments will be ignored when loading from a state file created on a different model (C47 versus R47 and vice versa) (TI : Loading state file ... ; State file loaded ; DMCP File open dialog ("Load Calculator State" -- STATE/))
Load system state	Command (nonpgm)		LOADSS	LOADSS	Input-Output	Load system state from SAVE file SAVFILES/C47.sav in FAT (TI : System settings loaded ; Directory : SAVFILES/)
Load variables	Command (nonpgm)		LOADV	LOADV	Input-Output	Load variables from SAVE file SAVFILES/C47.sav in FAT (TI : User variables loaded ; Directory : SAVFILES/)
Local label a	EasyAccess (TAM)		a		Trailing input	Easy access to local label a
Local label A	EasyAccess (TAM)		A		Trailing input	Easy access to local label A (Shortcut : LBL {A})
Local label b	EasyAccess (TAM)		b		Trailing input	Easy access to local label b
Local label B	EasyAccess (TAM)		B		Trailing input	Easy access to local label B (Shortcut : LBL {B})

FullName	Type	Default	Label	Catalog	Category	Extended description
Local label c	EasyAccess (TAM)		c		Trailing input	Easy access to local label c
Local label C	EasyAccess (TAM)		C		Trailing input	Easy access to local label C (Shortcut : LBL {C})
Local label d	EasyAccess (TAM)		d		Trailing input	Easy access to local label d
Local label D	EasyAccess (TAM)		D		Trailing input	Easy access to local label D (Shortcut : LBL {D})
Local label e	EasyAccess (TAM)		e		Trailing input	Easy access to local label e
Local label E	EasyAccess (TAM)		E		Trailing input	Easy access to local label E (Shortcut : LBL {E})
Local label f	EasyAccess (TAM)		f		Trailing input	Easy access to local label f
Local label F	EasyAccess (TAM)		F		Trailing input	Easy access to local label F
Local label g	EasyAccess (TAM)		g		Trailing input	Easy access to local label g
Local label G	EasyAccess (TAM)		G		Trailing input	Easy access to local label G (Shortcut : LBL {G})
Local label h	EasyAccess (TAM)		h		Trailing input	Easy access to local label h
Local label H	EasyAccess (TAM)		H		Trailing input	Easy access to local label H (Shortcut : LBL {H})
Local label i	EasyAccess (TAM)		i		Trailing input	Easy access to local label i
Local label I	EasyAccess (TAM)		I		Trailing input	Easy access to local label I (Shortcut : LBL {I})
Local label j	EasyAccess (TAM)		j		Trailing input	Easy access to local label j
Local label J	EasyAccess (TAM)		J		Trailing input	Easy access to local label J (Shortcut : LBL {J})
Local label k	EasyAccess (TAM)		k		Trailing input	Easy access to local label k
Local label K	EasyAccess (TAM)		K		Trailing input	Easy access to local label K (Shortcut : LBL {K})
Local label l	EasyAccess (TAM)		l		Trailing input	Easy access to local label l
Local label L	EasyAccess (TAM)		L		Trailing input	Easy access to local label L (Shortcut : LBL {L})
Log normal cdf (lower)	Function (monadic)		LgNrm _L	LgNrm _L	Probability (real)	Log normal cumulative distribution (lower tail)
Log normal cdf (upper)	Function (monadic)		LgNrm _U	LgNrm _U	Probability (real)	Log normal cumulative distribution (upper tail)
Log normal pdf	Function (monadic)		LgNrm _p	LgNrm _p	Probability (real)	Log normal probability density function
Log normal qf (inverse)	Function (monadic)		LgNrm ⁻¹	LgNrm ⁻¹	Probability (real)	Log normal inverse cumulative distribution (quantile)
LOG _{xy}	Function (dyadic)		LOG _{xy}	LOG _{xy}	Mathematics	Logarithm of Y for base X
Logarithmic fit	Setting	OFF	LogF	LogF ☐	Plotting and curve fitting	Set <BestF> to include Logarithmic curve fitting : y = a ₀ + a ₁ ln(x) ; deselects OrthoF (Info : Adds 4 to <BestF> ; TI : L.R. selected to <BestF>.)
Logistic cdf (lower)	Function (monadic)		Logis _L	Logis _L	Probability (real)	Logistic cumulative distribution (lower tail)
Logistic cdf (upper)	Function (monadic)		Logis _U	Logis _U	Probability (real)	Logistic cumulative distribution (upper tail)
Logistic distribution	MENU		[Logis:]	Logis:	Probability (real)	Logistic probability distribution (continuous) (TI : RegM = μ = ; RegS = s =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Logis_page_1.pdf
Logistic pdf	Function (monadic)		Logis _p	Logis _p	Probability (real)	Logistic probability density function
Logistic qf (inverse)	Function (monadic)		Logis ⁻¹	Logis ⁻¹	Probability (real)	Logistic inverse cumulative distribution (quantile)
Long integer	Function (monadic)		LINT	LINT	Integers	Convert to Long integer (0) (Info : Max 1000 digits)
Long integer variables	MENU		[L.INTS]	L.INTS	Catalog	Auto-generated catalog of variables of the specified datatype : Long integer (0) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_L-INTS_page_1.pdf
Long integer?	Command (logical)		LINT?	LINT?	Programming	Test type of X is Long integer (0) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
long ton to kg	Function (monadic, linked)		long ton→kg		Mass conversions	Convert long ton to kilogram (TI : kg)
Longpress f and g shortcuts	Setting	ON	KEY.LP	KEY.LP ☐	User interface	Switch on longpress shortcuts for single shift keys ; not programmable - in PEM, use flag KEY.LP (Info : KEY.LP pertains to R47v0 f g layout and R47v2 f g layout only and also enables longpress assignment to single shift keys)
Longpress f and g shortcuts	Flag	SET	KEY.LP		User interface	SET for longpress shortcuts for single shift keys ; CLEAR for longpress f and g shortcuts inactive (Info : KEY.LP pertains to R47v0 f g layout and R47v2 f g layout only and also enables longpress assignment to single shift keys)
Looping	MENU		[LOOP]	LOOP	Programming	Looping (programming) functions ; Keyboard g[3] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_LOOP_page_1.pdf
Low Battery	Flag (system)	CLEAR	LOWBAT		System	SET for low battery voltage ; CLEAR for no low battery voltage (Info : SBI ☐ is shown if flag SBbatV is SET)
Low bin	Command		↓BIN	↓BIN	Plotting and statistics	Low bin (TI : ↑BIN : ; ↓BIN : ; nBINS :)
Lower estimate for solver	Variable (real)	0	↓Est	↓EST	Solver	Reserved Real variable for the lower estimate for solver (↓Est) ; displays as ↓E in menu ToolS for larger values ; set interactively from menu ToolS and set by realSlv ₀ or cpxSlv ₀ (Split screen : Displaying ↑Est Upper = ; ↓Est Lower =)
Lower incomplete Gamma function	Function (dyadic)		γ _{xy}	γ _{xy}	Mathematics	Lower incomplete Gamma function -- see https://en.wikipedia.org/wiki/Incomplete_gamma_function

FullName	Type	Default	Label	Catalog	Category	Extended description
Lower limit for integrator	Variable (real)	0	$\Downarrow\text{Lim}$	$\Downarrow\text{Lim}$	Integrator	Reserved Real variable for the lower limit for integrator ($\Downarrow\text{Lim}$) ; displays as $\Downarrow\text{L}$ in menu Tool $\bar{\bar{f}}$ for larger values ; set interactively from menu Tool $\bar{\bar{f}}$ and set by $\int_X^x$ (TI : $\Downarrow$ Lower limit :)
Lower limit for X-axis	Variable (real)	-10	$\Downarrow\text{X}$	$\Downarrow\text{X}$	Plotting	Reserved Real variable for the lower limit for X-axis ($\Downarrow\text{X}$) ; set interactively from menu Graphs and set by Draw $\bar{\bar{g}}$ (TI : ' $\Downarrow\text{X}$ ' :)
Lower limit for Y-axis	Variable (real)	0	$\Downarrow\text{Y}$	$\Downarrow\text{Y}$	Plotting	Reserved Real variable for the lower limit for Y-axis ($\Downarrow\text{Y}$) ; set interactively from menu Graphs and set by Plot functions (TI : ' $\Downarrow\text{Y}$ ' :)
Lower quartile	Command		x_{Q1}	x_{Q1}	Summary statistics	Lower quartile for both X and Y -- see https://en.wikipedia.org/wiki/Quartile#Method_1 (TI : $Q_1\ x = ; Q_1\ y =$)
Lower regularised incomplete Gamma function	Function (dyadic)		Γ_P	Γ_P	Mathematics	Lower regularised incomplete Gamma function (P) -- see https://mathworld.wolfram.com/RegularizedGammaFunction.html
LU decomposition	Function (monadic)		M.LU	M.LU	Matrix operations	Decompose matrix in X into lower (L) in Y and upper (U or R) matrix in X ; pivot matrix in Z (Info : LU (LR) factorisation, underlies inversion and linear solving)
ly to m	Function (monadic, linked)		ly $\rightarrow$ m		Distance conversions	Convert light year to metre (TI : m $\bar{\bar{c}}$)
M	Character		M		Characters	Character M (Fontcode : 004D ₁₆) ; Keyboard alpha [x $\bar{\bar{z}}$ y]
m	Character		m		Characters	Character m (Fontcode : 006D ₁₆) ; Keyboard alpha f [x $\bar{\bar{z}}$ y]
m to au	Function (monadic, linked)		m $\rightarrow$ au		Distance conversions	Convert metre to astronomical unit (TI : au:)
m to brds	Function (monadic, linked)		m $\rightarrow$ brds		Distance conversions	Convert metre to beardsecond (TI : brds:)
m to chí	Function (monadic, linked)		m $\rightarrow$ chí		Distance conversions	Convert metre to chí (TI : chí:)
m to cùn	Function (monadic, linked)		m $\rightarrow$ cùn		Distance conversions	Convert metre to cùn (TI : cùn:)
m to fathom	Function (monadic, linked)		m $\rightarrow$ fathom		Distance conversions	Convert metre to fathom (TI : fathom:)
m to fēn	Function (monadic, linked)		m $\rightarrow$ fēn		Distance conversions	Convert metre to fēn (TI : fēn:)
m to ft	Function (monadic, linked)		m $\rightarrow$ ft		Distance conversions	Convert metre to foot (TI : ft:)
m to fur	Function (monadic, linked)		m $\rightarrow$ fur		Distance conversions	Convert metre to furlong (TI : fur:)
m to lǐ	Function (monadic, linked)		m $\rightarrow$ lǐ		Distance conversions	Convert metre to lǐ (TI : lǐ:)
m to ly	Function (monadic, linked)		m $\rightarrow$ ly		Distance conversions	Convert metre to light year (TI : ly:)
m to mi	Function (monadic, linked)		m $\rightarrow$ mi		Distance conversions	Convert metre to mile (TI : mi:)
m to nmi	Function (monadic, linked)		m $\rightarrow$ nmi		Distance conversions	Convert metre to nautical mile (TI : nmi:)
m to pc	Function (monadic, linked)		m $\rightarrow$ pc		Distance conversions	Convert metre to parsec (TI : pc:)
m to survey ft _{US}	Function (monadic, linked)		m $\rightarrow$ survey ft _{US}		Distance conversions	Convert metre to US survey foot (TI : survey ft _{US} ; Info : single = ey ft _{US} ←)
m to yd	Function (monadic, linked)		m $\rightarrow$ yd		Distance conversions	Convert metre to yard (TI : yd:)
m to yǐn	Function (monadic, linked)		m $\rightarrow$ yǐn		Distance conversions	Convert metre to yǐn (TI : yǐn:)
m to zhàng	Function (monadic, linked)		m $\rightarrow$ zhàng		Distance conversions	Convert metre to zhàng (TI : zhàng:)
m/s to ft/s	Function (monadic, linked)		m/s $\rightarrow$ ft/s		Speed conversions	Convert metre per second to foot per second (TI : ft/s:)
m/s to fur/ftn	Function (monadic, linked)		m/s $\rightarrow$ fur/ftn		Speed conversions	Convert metre per second to furlong per fortnight (TI : fur/ftn: ; Info : single = ur/ftn←)
m/s to km/h	Function (monadic, linked)		m/s $\rightarrow$ km/h		Speed conversions	Convert metre per second to kilometre per hour (TI : km/h:)
m/s to knot	Function (monadic, linked)		m/s $\rightarrow$ knot		Speed conversions	Convert metre per second to knot (TI : knot:)
m/s to mph	Function (monadic, linked)		m/s $\rightarrow$ mph		Speed conversions	Convert metre per second to mile per hour (TI : mph:)
m/s ² to ft/s ²	Function (monadic, linked)		m/s ² $\rightarrow$ ft/s ²		Acceleration conversions	Convert metre per second squared to foot per second squared (TI : ft/s ² :)
m/s ² to in/s ²	Function (monadic, linked)		m/s ² $\rightarrow$ in/s ²		Acceleration conversions	Convert metre per second squared to inch per second squared (TI : in/s ² :)
Magnetic flux quantum	Constant		Φ_0		Constants	Constant # 75 Φ_0 fluxq.magn = +2.067833840461929323081115412147497 $\times 10^{-15}$ (Unit : Vs)
Magnitude	Function (monadic)		x	x	Complex numbers	Magnitude (absolute value) of Complex number ; Keyboard f [STO]
Mantissa	Function (monadic)		MANT	MANT	Reals	Mantissa of real number
Martel printer	Setting	OFF	Martel	Martel O	Printing	Set the printer type to Martel (Info : The Martel printer supporting the HPIR interface may show some slight variations in character size or text position, in comparison to the 82240)
Mass conversions	MENU		[Mass:]	Mass:	Mass conversions	Convert between units of mass (Info : Flag CONV _{HP} may be SET for <to> $\leftrightarrow$ <to> unit conversion buttons ; CLEAR for <from> $\rightarrow$ ← <from> unit conversion buttons (default SET) ; Ref : https://47calc.com/doc/Application%20Notes/AN0027_C47_R47_DA_Structural_conversions.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Mass_page_1.pdf
Mass of the Earth	Constant		$M_{\oplus}$		Constants	Constant # 35 $M_{\oplus}$ mass.earth = +5.9736 $\times 10^{24}$ (Unit : kg)
Mass of the Moon	Constant		M_{Moon}		Constants	Constant # 25 M_{Moon} mass.moon = +7.349 $\times 10^{22}$ (Unit : kg)
Mass of the Sun	Constant		$M_{\odot}$		Constants	Constant # 34 $M_{\odot}$ mass.sun = +1.9891 $\times 10^{30}$ (Unit : kg)

FullName	Type	Default	Label	Catalog	Category	Extended description
Material properties conversions	MENU		[MatPrp:]	MatPrp:	Miscellaneous conversions	Convert between units of material properties ; typical material properties given in material data sheets references (Info : Flag CONV _{HP} may be SET for <to> <-> <to> unit conversion buttons; CLEAR for <from> > <- <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MatPrp_page_1.pdf
Math keys do full cycle	Setting (pgm)	ON	M.1234		User interface	Longpress control : Math keys do full cycle (Info : 1. primaryNM : unshifted ; 2. longpress : f-shift ; 3. longerpress : g-shift ; 4. longestpress : NOP ; Math keys are keys in row 2-4 except [E] and [↵])
Math keys skip f- and g-shift	Setting (pgm)	OFF	M.14		User interface	Longpress control : Math keys skip f- and g-shift (Info : 1. primaryNM : unshifted ; 4. longestpress : NOP ; Math keys are keys in row 2-4 except [E] and [↵])
Math keys skip g-shift	Setting (pgm)	OFF	M.124		User interface	Longpress control : Math keys skip g-shift (Info : 1. primaryNM : unshifted ; 2. longpress : f-shift ; 4. longestpress : NOP ; Math keys are keys in row 2-4 except [E] and [↵])
Matrix	MENU		[MATX]	MATX	Matrix operations	Matrix functions ; a matrix is displayed in X and shown in other stack registers as [m×n Matrix] or [m×n C Matrix] when containing complex element(s) (Ref : https://47calc.com/doc/Application%20Notes/AN0020_C47_R47_Matrix_and_Vector.pdf ; Info : monadic functions work per matrix element (except 1/x, which is a shortcut for [M] ⁻¹ , use -1 y* instead ; and √x, which is a shortcut for MSQRT, use 0.5 y* instead) ; in edit mode, all functions work per element ; use registers to input calculation results) ; Keyboard f[9] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MATX_page_1.pdf
Matrix A	Variable (matrix)		Mat A	Mat_A	Matrix operations	Reserved Matrix variable for the Matrix A (Mat A) ; enter equation coefficient matrix using menu M_SIMQ ; created after RESET
Matrix B	Variable (matrix)		Mat B	Mat_B	Matrix operations	Reserved Matrix variable for the Matrix B (Mat B) ; enter equation result vector using menu M_SIMQ ; created after RESET
Matrix dimension (X)	Function (42, monadic)		42DIM#	42DIM#	Matrix operations	Get dimensions of matrix in X ; this is a HP-42S/DM42(n) calculator compatible function
Matrix dimension? (named)	Command		DIMN#	M.DIMN#	Matrix operations	Get dimensions of matrix in register or variable (TAM : M.DIMN# __ Tam menu)
Matrix editor	MENU		[M_EDIT]	M_EDIT	Matrix operations	Matrix editor (Info : MIM = Matrix Input Mode ; [▲] or [▼] to move up or down one position ; Ref : 1/x, which is a shortcut for [M] ⁻¹ , use -1 y* instead ; and √x, which is a shortcut for MSQRT, use 0.5 y* instead) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_M_EDIT_page_1.pdf
Matrix lower left	Character				Characters	Character (Fontcode : 23A316)
Matrix lower right	Character				Characters	Character (Fontcode : 23A616)
Matrix middle left	Character				Characters	Character (Fontcode : 23A216)
Matrix middle right	Character				Characters	Character (Fontcode : 23A516)
Matrix simultaneous equations	MENU (item)		[SIM EQ]	SIM_EQ	Matrix operations	Matrix simultaneous equations : Mat A · Mat X = Mat B, where Mat A is the equation coefficient matrix and Mat B is the equation result vector ; Mat X is the equation solution vector (TAM : SIM_EQ __ TamNonReg menu to enter number of equations ; Info : CAT.MENUS M_SIMQ) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_SIM_EQ_page_1.pdf
Matrix simultaneous equations	MENU		[M_SIMQ]	M_SIMQ	Matrix operations	Matrix simultaneous equations : Mat A · Mat X = Mat B, where Mat A is the equation coefficient matrix and Mat B is the equation result vector ; Mat X is the equation solution vector Docs: https://47calc.com/doc/C47/Menus/C47_Menu_M_SIMQ_page_1.pdf
Matrix upper left	Character				Characters	Character (Fontcode : 23A116)
Matrix upper right	Character				Characters	Character (Fontcode : 23A416)
Matrix X	Command		Mat X	Mat_X	Matrix operations	Create reserved Matrix variable for the Matrix X (Mat X) ; calculate equation solution vector using menu M_SIMQ ; created after RESET
Matrix X	Variable (matrix)		Mat X	Mat_X	Matrix operations	Reserved Matrix variable for the Matrix X (Mat X) ; calculate equation solution vector using menu M_SIMQ ; created after RESET
Maxima	Command		XMAX	XMAX	Summary statistics	Maxima (TI : XMAX = ; YMAX =)
Maximum	Function (dyadic)		MAX	MAX	Mathematics	Maximum of X and Y
Maximum column value	Function (monadic)		CMAX	M.CMAX	Matrix operations	Maximum column value for column (J) of indexed matrix, returns row index (I) in Y and maximum in X (Info : Set starting row and column index using STOIJ before executing CMAX)
Mean radius of the Earth	Constant		R _⊕		Constants	Constant # 45 R _⊕ rad.earth = +6.37101 × 10 ⁶ (Unit : m)

FullName	Type	Default	Label	Catalog	Category	Extended description
Mean radius of the Moon	Constant		R _{moon}		Constants	Constant # 42 R _{moon} rad.moon = +1.73753 × 10 ⁶ (Unit : m)
Mean radius of the Sun	Constant		R _☉		Constants	Constant # 44 R _☉ rad.sun = +6.96 × 10 ⁸ (Unit : m)
Mean rate of return	Command		%MRR	%MRR	Financial	Mean rate of return in percentage per period : %MRR = 100 × (x/y - 1) ^ (1/z) - - see Formula_PCMRR.png : https://47calc.com/doc/Images/Formula_PCMRR.png (TI : % :)
Measured angle	Character		∠		Characters	Character ∠ (Fontcode : 2221 ₁₆)
Median	Command		XMEDN	XMEDN	Summary statistics	Sort the data and return the middle value for both X and Y ; for an even number of samples, the arithmetic mean of the two middle values is returned (TI : md _x = ; md _y =)
Median absolute deviation	Command		XHAD	XHAD	Summary statistics	Median absolute deviation for both X and Y ; this is the median of the differences between each data point and the overall median (TI : mad _x = ; mad _y =)
Mega	Command (nonpgm)		·M		Numeric input	Factor 10 ⁶
Mega binary	Command (nonpgm)		·Mi		Numeric input	Factor 10 ²⁰
Memory (RAM)	Command		MEM	MEM	System	Get amount of free RAM memory, in bytes (TI : Bytes =)
Menu	MENU (ASM)		[MENU]	MENU	Trailing input	Presented in menu TamMenu for commands accessing menus (Info : Type characters 1-2 to search) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MENU_page_1.pdf
Menu f,g-highlighting Full	Setting (pgm)	ON	fg.FUL	fg.FUL ▣	User interface	Switch on menu f,g-highlighting full (Info : fg.FUL and fg.LIM are linked (both cannot be ON at the same time))
Menu f,g-highlighting Full	Flag	SET	fg.FUL		User interface	SET for menu f,g-highlighting full ; CLEAR for menu f,g-highlighting full inactive (Info : fg.FUL and fg.LIM are linked (both cannot be SET at the same time))
Menu f,g-highlighting Grey	Flag	CLEAR	fg.GR		User interface	SET for menu f,g-highlighting grey ; CLEAR for menu f,g-highlighting grey inactive
Menu f,g-highlighting Grey	Setting (pgm)	OFF	fg.GR	fg.GR □	User interface	Switch on menu f,g-highlighting grey
Menu f,g-highlighting Limited	Setting (pgm)	OFF	fg.LIM	fg.LIM □	User interface	Switch on menu f,g-highlighting limited (Info : fg.LIM and fg.FUL are linked (both cannot be ON at the same time))
Menu f,g-highlighting Limited	Flag	CLEAR	fg.LIM		User interface	SET for menu f,g-highlighting limited ; CLEAR for menu f,g-highlighting limited inactive (Info : fg.LIM and fg.FUL are linked (both cannot be SET at the same time))
Menu opens on p1	Setting (pgm)	ON	MNUUp1	MNUUp1 ▣	User interface	Switch on menu opens on p1
Menu opens on p1	Flag	SET	MNUUp1		User interface	SET for menu opens on p1 ; CLEAR for menu opens on page last used
Menus	MENU (ASM)		[MENUS]	MENUS	Catalog	Catalog of all menus (including user defined menus) (Info : Type characters 1-2 to search ; Ref : https://47calc.com/doc/C47/Reference/C47_CAT-MENUS.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MENUS_page_1.pdf
Message	Command (PEM)		MSG	MSG	Programming	Show error message (TAM : MSG __ TamNonReg menu ; Ref : https://47calc.com/doc/C47/Reference/C47_Errors_and_messages.pdf)
Message	Command (PEM, old)		>MSG<		Programming	Old version of the command MSG that used indirect addressing (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use MSG on [P.FN1.1] fF1 instead)
mi to km	Function (monadic, linked)		mi→km		Distance conversions	Convert mile to kilometre (TI : km:)
mi to m	Function (monadic, linked)		mi→m		Distance conversions	Convert mile to metre (TI : m:)
mi to nmi	Function (monadic, linked)		mi→nmi		Distance conversions	Convert mile to nautical mile (TI : nmi:)
mi/kWh to kWh/l _{100mi}	Function (monadic, linked)		mi/kWh→kWh/l _{100mi}		EV economy conversions	Convert mile per kiloWatt-hour to kiloWatt-hour per 100 mile (TI : kWh/100mi ; Info : single = E/l _{100mi})
micro	Command (nonpgm)		·μ		Numeric input	Factor 10 ⁻⁶
Middle dot	Character		·		Characters	Character · (Fontcode : 00B7 ₁₆)
Middle East Week of Year rule	Setting (pgm)	OFF	WOYME	WOYME	Time functions	Set Week of Year rule to Middle East ; week starts on Saturday and week number depends on the first Friday ; returns 6.5 (TI : Week of Year rule set: Saturday.Friday ; Info : SBI Ww#-d# is shown if flag SBwoy is SET)
m ² to ft ²	Function (monadic, linked)		m ² →ft ²		Area conversions	Convert square metre to square foot (TI : ft ² :)
m ² to ha	Function (monadic, linked)		m ² →ha		Area conversions	Convert square metre to hectare (TI : ha:)
m ² to mü	Function (monadic, linked)		m ² →mü		Area conversions	Convert square metre to mü (TI : mü:)
mi ² to km ²	Function (monadic, linked)		mi ² →km ²		Area conversions	Convert square mile to square kilometre (TI : km ² :)

FullName	Type	Default	Label	Catalog	Category	Extended description
Mileage conversions	MENU		[Ymmv:]	Ymmv:	Mileage conversions	Convert between units of mileage ("Your mileage may vary") (Info : "E" designates "kWh" ; Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> ↗↖ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Ymmv_page_1.pdf
milli	Command (nonpgm)		-m		Numeric input	Factor 10 ⁻³
Minima	Command		X _{MIN}	X _{MIN}	Summary statistics	Minima (TI : X _{MIN} = ; Y _{MIN} =)
Minimum	Function (dyadic)		MIN	MIN	Mathematics	Minimum of X and Y
Minimum column value	Function (monadic)		CMIN	M.CMIN	Matrix operations	Minimum column value for column (J) of indexed matrix, returns row index (I) in Y and minimum in X (Info : Set starting row and column index using STOIJ before executing CMIN)
Minus	Character		-		Characters	Minus (Shortcut : alpha g [-] ; Info : Fontcode : 002D ₁₆)
Minus infinity	Constant		-∞		Constants	Constant # 77 -∞ inf.minus = -∞
Minus-plus	Character		∓		Characters	Character ∓ (Fontcode : 2213 ₁₆)
Minutes	Function (monadic)		MINUTE	MINUTE	Time functions	Minutes (of time in X)
Minutes & seconds	Function (monadic, cyclic)		.ms	.ms	Time/angle conversions	Convert sexagesimal format input sequence or decimal stack value to hh:mm:ss hours or dd°mm'ss" degrees (cyclic) (Info : NIM input treated as sexagesimal (hh/dd.mmss) format ; stack input treated as decimal value) ; Keyboard g [√x]
Mirror bits	Function (monadic)		MIRROR	MIRROR	Bits and bytes	Flip bits
Miscellaneous conversions	MENU		[Misc:]	Misc:	Miscellaneous conversions	Time, torque, power and field ratio conversions (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> ↗↖ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Misc_page_1.pdf
m ³ to barrel	Function (monadic, linked)		m ³ →barrel		Volume conversions	Convert cubic metre to barrel (TI : barrel)
ml to cup _{UK}	Function (monadic, linked)		ml→cup _{UK}		Volume conversions	Convert millilitre to UK imperial cup (TI : cup _{UK})
ml to cup _{US}	Function (monadic, linked)		ml→cup _{US}		Volume conversions	Convert millilitre to US customary cup (TI : cup _{US})
ml to floz _{UK}	Function (monadic, linked)		ml→floz _{UK}		Volume conversions	Convert millilitre to UK fluid ounce (TI : floz _{UK})
ml to floz _{US}	Function (monadic, linked)		ml→floz _{US}		Volume conversions	Convert millilitre to US fluid ounce (TI : floz _{US})
ml to in ³	Function (monadic, linked)		ml→in ³		Volume conversions	Convert millilitre to cubic inch (TI : in ³)
ml to pint _{UK}	Function (monadic, linked)		ml→pint _{UK}		Volume conversions	Convert millilitre to UK imperial pint (TI : pint _{UK})
ml to pint _{US}	Function (monadic, linked)		ml→pint _{US}		Volume conversions	Convert millilitre to US liquid pint (TI : pint _{US})
ml to qt _{UK}	Function (monadic, linked)		ml→qt _{UK}		Volume conversions	Convert millilitre to UK quart (TI : qt _{UK})
ml to qt _{US}	Function (monadic, linked)		ml→qt _{US}		Volume conversions	Convert millilitre to US quart (TI : qt _{US})
ml to tbs _{UK}	Function (monadic, linked)		ml→tbs _{UK}		Volume conversions	Convert millilitre to UK imperial tablespoon (TI : tbs _{UK})
ml to Tbs _{US}	Function (monadic, linked)		ml→Tbs _{US}		Volume conversions	Convert millilitre to US customary tablespoon (TI : Tbs _{US})
ml to tsp _{UK}	Function (monadic, linked)		ml→tsp _{UK}		Volume conversions	Convert millilitre to UK imperial teaspoon (TI : tsp _{UK})
ml to tsp _{US}	Function (monadic, linked)		ml→tsp _{US}		Volume conversions	Convert millilitre to US customary teaspoon (TI : tsp _{US})
mm to Banana	Function (monadic, linked)		mm→Banana		Distance conversions	Convert millimetre to Banana length (TI : Banana)
mm to in	Function (monadic, linked)		mm→in		Distance conversions	Convert millimetre to inch (TI : in)
mm to point	Function (monadic, linked)		mm→point		Distance conversions	Convert millimetre to point (TI : point)
mmHg to Pa	Function (monadic, linked)		mmHg→Pa		Pressure conversions	Convert millimetre of Mercury to Pascal (TI : Pa)
mm ² to in ²	Function (monadic, linked)		mm ² →in ²		Area conversions	Convert square millimetre to square inch (TI : in ²)
mm ³ to in ³	Function (monadic, linked)		mm ³ →in ³		Volume conversions	Convert cubic millimetre to cubic inch (TI : in ³)
mm ⁴ to in ⁴	Function (monadic, linked)		mm ⁴ →in ⁴		Fixed pair conversions	Convert millimetre to the power 4 to inch to the power 4 (TI : in ⁴)
mm ⁶ to in ⁶	Function (monadic, linked)		mm ⁶ →in ⁶		Fixed pair conversions	Convert millimetre to the power 6 to inch to the power 6 (TI : in ⁶)
Mode settings	MENU		[MODE]	MODE	System	System (mode settings) settings (Info : MODE replaces R47 menu PREF ; Ref : https://47calc.com/doc/Application%20Notes/AN0028_C47_R47_JM_Configurability_To_ur.pdf) ; Keyboard f [+/-] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MODE_page_1.pdf
Model	MENU		[MODEL]	MODEL	Plotting and curve fitting	Functions to set parameter for which models are selected in the LR analysis (Ref : https://47calc.com/doc/C47/Reference/C47_BestF_param.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MODEL_page_1.pdf
Modulo	Function (dyadic)		MOD	MOD	Mathematics	Y modulo X
Modulus to angle	Function (monadic)		m→θ	m→θ	Mathematics	Ellipse modulus to eccentricity angle : θ = ARCSIN(√m) (TI : eccentricity angle θ :)
Modulus to eccentricity	Function (monadic)		m→k	m→k	Mathematics	Ellipse modulus to eccentricity : k = √m (TI : eccentricity e=k=√m :)
Molar gas constant	Constant		R		Constants	Constant # 39 R c.mol.gas = +8.31446261815324 (Unit : J/mol K)

FullName	Type	Default	Label	Catalog	Category	Extended description
Moment loads conversions	MENU		[MLoads:]	MLoads:	Torque/moment conversions	Convert between units of moment loads ; typical moment loads units (torque) (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons; CLEAR for <from> → ← <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MLoads_page_1.pdf
Month	Function (monadic)		MONTH	MONTH	Time functions	Month (of date in X)
Month/day/year	Setting (pgm)	OFF	MDY	MDY O	Display	Switch on MM/DD/YYYY display mode (Format : MM/DD/YYYY ; Info : SBI is shown if flag SBdate is SET)
Month/day/year	Flag (system)	CLEAR	MDY		Display	SET for MM/DD/YYYY display mode; CLEAR for MM/DD/YYYY display mode inactive (Format : MM/DD/YYYY ; Info : SBI is shown if flag SBdate is SET)
Moon orbit (semi major axis)	Constant		a _{moon}		Constants	Constant # 3 a _{moon} orb.moon = +3.844 × 10 ⁸ (Unit : m)
More trig/hyperbolics	MENU		[TRG...]	TRG...	Trigonometry	Extended trigonometry (and access to hyperbolic) functions Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TRG_MORE_page_1.pdf
Move cursor left	Arrow		←		Navigation	Move cursor left
Move cursor right	Arrow		→		Navigation	Move cursor right
Move down	Arrow		↓		Navigation and characters	Move down one position (Fontcode : 2193 ₁₆)
Move left	Arrow		←		Navigation and characters	Move left one position (Fontcode : 2190 ₁₆)
Move right	Arrow		→		Navigation and characters	Move right one position (Fontcode : 2192 ₁₆)
Move up	Arrow		↑		Navigation and characters	Move up one position (Fontcode : 2191 ₁₆)
MPa to ksi	Function (monadic, linked)		MPa→ksi		Pressure conversions	Convert MegaPascal to kilo-pound force per square inch (TI : ksi)
mpg _{UK} to kWh/l _{mi}	Function (monadic, linked)		mpg _{UK} →kWh/l _{mi}		EV economy conversions	Convert mpg gasoline equivalent UK to kiloWatt-hour per 100 mile (TI : kWh/100mi ; Info : single = E/l _{mi} ←)
mpg _{US} to kWh/l _{mi}	Function (monadic, linked)		mpg _{US} →kWh/l _{mi}		EV economy conversions	Convert mpg gasoline equivalent US to kiloWatt-hour per 100 mile (TI : kWh/100mi ; Info : single = E/l _{mi} ←)
mpg _{UK} to l/l _{km}	Function (monadic, linked)		mpg _{UK} →l/l _{km}		Fuel economy conversions	Convert mile per gallon UK to litre per 100 kilometre (TI : l/100km)
mpg _{US} to l/l _{km}	Function (monadic, linked)		mpg _{US} →l/l _{km}		Fuel economy conversions	Convert mile per gallon US to litre per 100 kilometre (TI : l/100km)
mph to ft/s	Function (monadic, linked)		mph→ft/s		Speed conversions	Convert mile per hour to foot per second (TI : ft/s)
mph to fur/ftn	Function (monadic, linked)		mph→fur/ftn		Speed conversions	Convert mile per hour to furlong per fortnight (TI : fur/ftn ; Info : single = ur/ftn←)
mph to km/h	Function (monadic, linked)		mph→km/h		Speed conversions	Convert mile per hour to kilometre per hour (TI : km/h)
mph to knot	Function (monadic, linked)		mph→knot		Speed conversions	Convert mile per hour to knot (TI : knot)
mph to m/s	Function (monadic, linked)		mph→m/s		Speed conversions	Convert mile per hour to metre per second (TI : m/s)
μ	Character		μ		Characters	Character μ (Fontcode : 00B5 ₁₆)
MU	Character		M		Characters	Character M (Fontcode : 039C ₁₆ ; Info : press [▼] for μ at [α...ω.1]gF1)
μ	Character		μ		Characters	Character μ (Fontcode : 03BC ₁₆ ; Info : press [▲] for M at [A...Ω.1]gF1)
m ² to m ²	Function (monadic, linked)		m ² →m ²		Area conversions	Convert m ² to square metre (TI : m ²)
Much greater than	Character		»		Characters	Character » (Fontcode : 226B ₁₆)
Much less than	Character		«		Characters	Character « (Fontcode : 226A ₁₆)
Multi-stack commands	MENU		[MULTSTK]	MULTSTK	Stack	Multi-stack commands Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MULTSTK_page_1.pdf
Multiplication symbol	Flag	SET	MULT×		Display	SET for displaying multiplication symbol ×; CLEAR for displaying multiplication symbol · (Info : Multiplication symbol is used in exponential and complex notation ; symbol may be displayed in annunciator(s) related to FRACT settings)
Multiplication symbol ·	Setting (pgm)	OFF	MULT·	MULT· O	Display	Switch on displaying multiplication symbol ·
Multiplication symbol ×	Setting (pgm)	ON	MULT×	MULT× @	Display	Switch on displaying multiplication symbol ×
Multiply	Function (dyadic)		×	×	Mathematics	Multiply Y by X ; Keyboard [x]
Multiply (prime) factors	Function (monadic)		M.FACT	M.FACT	Integers	Multiply (prime) factors from a 2 row matrix in X (row 1 contains the factors, row 2 contains the powers) (Info : E.g. use FACTORS matrix as input in X)
Multiply X into register	Function (monadic)		STO×	STO×	Stack	Multiply register or variable by X (Shortcut : [STO] - [x] ; TAM : STO× __ TamSto menu)
Muon magnetic moment	Constant		μ _B		Constants	Constant # 72 μ _B mgmom.muon = -4.490483 × 10 ⁻²⁶ (Unit : J/T)
Muon rest mass	Constant		m _μ		Constants	Constant # 33 m _μ mass.muon = +1.883531627 × 10 ⁻²⁸ (Unit : kg)
MyAlpha	MENU		[Myα]	Myα	Customisation	User menu to quickly access user selected special characters ; all buttons are user assignable ('riveted' look) ; initially unpopulated ; reset using Myα.R (Shortcut : alpha long [EXIT] ; EIM long [EXIT]) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MyAlpha_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
MyMenu	MENU (item, nonpgm)		[MyM]	MyMenu	Customisation	User menu presenting a ribbon to quickly access user selected functions (and menus) ; all buttons are user assignable ('riveted' look) ; set by RIBBONS ; reset using MyM.R ; default ribbon M.C47 (Shortcut : longpress [EXIT] ; NIM long [EXIT]) Docs: https://47calc.com/doc/C47/Menus/xxx1.pdf
MyMenu	MENU		[MyMenu]	MyMenu	Customisation	User menu presenting a ribbon to quickly access user selected functions (and menus) ; all buttons are user assignable ('riveted' look) ; set by RIBBONS ; reset using MyM.R ; default ribbon M.C47 (Shortcut : PEM longer [EXIT] ; longpress [EXIT] ; NIM long [EXIT] ; during assignment, pressing USER (f[2]) opens MyMenu ; Info : ribbons are documenten on page 1 : M.CPX ; 2 : M.ENG ; 3 : M.FIN ; 4 : M.SAV ; 5 : M.C47 ; 6 : M.R47 ; 7 : M.FIN+ ; 8 : M.SAV+) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MyMenu_page_1.pdf
MyMenu C47	Command		M.C47	M.C47	Customisation	MyMenu primary F-key C47 ribbon ; leaves shifted rows intact ; documented as MyMenu p5 (TI : MyMenu primary F-key C47 ribbon)
MyMenu C47 Plus	Command		M.C47+	M.C47+	Customisation	MyMenu primary F-key C47 Plus ribbon ; leaves shifted rows intact ; documented as MyMenu p9 (TI : MyMenu primary F-key C47 Plus ribbon)
MyMenu Complex	Command		M.CPX	M.CPX	Customisation	MyMenu primary F-key Complex ribbon ; leaves shifted rows intact ; documented as MyMenu p1 (TI : MyMenu primary F-key Complex ribbon)
MyMenu Engineering	Command		M.ENG	M.ENG	Customisation	MyMenu primary F-key Engineering ribbon ; leaves shifted rows intact ; documented as MyMenu p2 (TI : MyMenu primary F-key Engineering ribbon ; Info : ribbon M.ENG is layout dependent)
MyMenu f/g shortcut	Setting	OFF	MyMf ^g	MyMf ^g □	Customisation	Switch on MyMenu activated by triple and longerpress f/g-shift ; not programmable - in PEM, use flag MyMf ^g (Info : MyMf ^g and HOMEf ^g are linked (both cannot be ON at the same time ; MyMf ^g pertains to layouts containing key [f/g] only and also enables longerpress assignment to this key)
MyMenu f/g shortcut	Flag	CLEAR	MyMf ^g		Customisation	SET for MyMenu activated by triple and longerpress f/g-shift ; CLEAR for MyMenu f/g shortcut inactive (Info : MyMf ^g and HOMEf ^g are linked (both cannot be SET at the same time) ; MyMf ^g pertains to layouts containing key [f/g] only and also enables longerpress assignment to this key)
MyMenu Financial	Command		M.FIN	M.FIN	Customisation	MyMenu primary F-key Financial ribbon ; leaves shifted rows intact ; documented as MyMenu p3 (TI : MyMenu primary F-key Financial ribbon)
MyMenu Financial Plus	Command		M.FIN+	M.FIN+	Customisation	MyMenu primary F-key Financial Plus ribbon ; leaves shifted rows intact ; documented as MyMenu p7 (TI : MyMenu primary F-key Financial Plus ribbon)
MyMenu R47	Command		M.R47	M.R47	Customisation	MyMenu primary F-key R47 ribbon ; leaves shifted rows intact ; documented as MyMenu p6 (TI : MyMenu primary F-key R47 ribbon)
MyMenu R47 Plus	Command		M.R47+	M.R47+	Customisation	MyMenu primary F-key R47 Plus ribbon ; leaves shifted rows intact ; documented as MyMenu p10 (TI : MyMenu primary F-key R47 Plus ribbon)
MyMenu reset	Command		MyM.R		Cleanup	Clean (delete) all MyMenu user assignments (TI : MyMenu menu cleaned)
MyMenu Save/Load	Command		M.SAV	M.SAV	Customisation	MyMenu primary F-key Save/Load ribbon ; leaves shifted rows intact ; documented as MyMenu p4 (TI : MyMenu primary F-key Save/Load ribbon)
MyMenu Save/Load Plus	Command		M.SAV+	M.SAV+	Customisation	MyMenu primary F-key Save/Load Plus ribbon ; leaves shifted rows intact ; documented as MyMenu p8 (TI : MyMenu primary F-key Save/Load Plus ribbon)
MyMenu shown	Setting	ON	MyMb	MyMb ▣	Customisation	Switch on MyMenu shown ; not programmable - in PEM, use flag MyMb (Info : MyMb and HOMEb are linked (both cannot be ON at the same time ; applies when all menus are exited using EXIT)
MyMenu shown	Flag	SET	MyMb		Customisation	SET for MyMenu shown ; CLEAR for MyMenu not shown (Info : MyMb and HOMEb are linked (both cannot be SET at the same time) ; applies when all menus are exited using EXIT)
Myα menu reset	Command		Myα.R		Cleanup	Clean (delete) all Myα menu user assignments (TI : Myα menu cleaned)
N	Character		N		Characters	Character N (Fontcode : 004E ₁₆) ; Keyboard alpha [+/-]
n	Character		n		Characters	Character n (Fontcode : 006E ₁₆) ; Keyboard alpha f [+/-]
n	Command		n	nΣ	Summary statistics	Number of samples
N accute	Character		Ñ		Characters	Character Ñ (Fontcode : 0143 ₁₆ ; Info : press [▼] for ñ at [aintl.3]F2)
n accute	Character		ñ		Characters	Character ñ (Fontcode : 0144 ₁₆ ; Info : press [▲] for Ñ at [aintl.3]F2)
N caron	Character		Ň		Characters	Character Ň (Fontcode : 0147 ₁₆ ; Info : press [▼] for ñ at [aintl.3]F3)
n caron	Character		ň		Characters	Character ň (Fontcode : 0148 ₁₆ ; Info : press [▲] for Ñ at [aintl.3]F3)
N tilde	Character		Ñ		Characters	Character Ñ (Fontcode : 00D1 ₁₆ ; Info : press [▼] for ñ at [aintl.3]F1)
n tilde	Character		ñ		Characters	Character ñ (Fontcode : 00F1 ₁₆ ; Info : press [▲] for Ñ at [aintl.3]F1)
N to kgf	Function (monadic, linked)		N→kgf		Force conversions	Convert Newton to kilogram force (TI : kgf:)

FullName	Type	Default	Label	Catalog	Category	Extended description
N to lbf	Function (monadic, linked)		N→lbf		Force conversions	Convert Newton to pound force (TI : lbf:)
N-ary product	Character		$\prod$		Characters	Character $\prod$ (Fontcode : 220F ₁₆)
N-ary summation	Character		$\sum$		Characters	Character $\sum$ (Fontcode : 2211 ₁₆)
N-m to ft·lbf	Function (monadic, linked)		N-m→ft·lbf		Torque/moment conversions	Convert Newton-metre to foot-pound force (TI : ft·lbf:)
N-m to in·lbf	Function (monadic, linked)		N-m→in·lbf		Torque/moment conversions	Convert Newton-metre to inch-pound force (TI : in·lbf:)
N/m to kgf/m	Function (monadic, linked)		N/m→kgf/m		Linear Force Density conversions	Convert Newton per metre to kilogram force per metre (TI : kgf/m:)
N/m to lbf/ft	Function (monadic, linked)		N/m→lbf/ft		Linear Force Density conversions	Convert Newton per metre to pound force per foot (TI : lbf/ft:)
Nabla	Character		∇		Characters	Character ∇ (Fontcode : 2207 ₁₆)
Nand	Character		$\tilde{\wedge}$		Characters	Character $\tilde{\wedge}$ (Fontcode : 22BC ₁₆)
nano	Command (nonpgm)		-n		Numeric input	Factor 10 ⁻⁹
Narrow Apostrophe	Character		'		Characters	Character ' (Fontcode : 02BC ₁₆)
Natural logarithm of Euler's Beta function	Function (dyadic)		LNβ	LNβ	Mathematics	Natural logarithm of Euler's Beta function
Natural logarithm of Gamma function	Function (monadic)		LNΓ	LNΓ	Mathematics	Natural logarithm of Gamma function
Natural logarithm	Function (monadic)		LN	LN	Mathematics	Natural logarithm (base e) ; Keyboard [LN]
Natural logarithm	Symbol		LN		Mathematics and characters	Natural logarithm (base e) (Shortcut : alpha g[LN] ("LN"))
Natural N	Character		N		Characters	Character N (Fontcode : 2115 ₁₆)
Negative binomial cdf (lower)	Function (monadic)		NBin _l	NBin _l	Probability (int)	Negative binomial cumulative distribution (lower tail)
Negative binomial cdf (upper)	Function (monadic)		NBin _u	NBin _u	Probability (int)	Negative binomial cumulative distribution (upper tail)
Negative binomial pmf	Function (monadic)		NBin _p	NBin _p	Probability (int)	Negative binomial probability mass function
Negative binomial qf (inverse)	Function (monadic)		NBin ⁻¹	NBin ⁻¹	Probability (int)	Negative binomial inverse cumulative distribution (quantile)
Negative exclamation mark	Character		⓪		Characters	Character ⓪ (Fontcode : 242F ₁₆)
Neighbour	Function (dyadic)		NEIGHB	NEIGHB	Mathematics	Get neighbour value of X compared to Y (next integer or next machine representable Real number)
Neutron / proton rest mass	Constant		m _n /m _p		Constants	Constant # 27 m _n /m _p r.neu.prot = +1.00137841946
Neutron magnetic moment	Constant		μ _n		Constants	Constant # 69 μ _n magmom.neu = -9.6623653 × 10 ⁻²⁷ (Unit : J/T)
Neutron rest mass	Constant		m _n		Constants	Constant # 26 m _n mass.neu = +1.67492750056 × 10 ⁻²⁷ (Unit : kg)
New equation	MENU (item, nonpgm)		[NEW]	EQ.NEW	Equations	Open equation editor menu to create new equation (previous equation pushed) (Info : EIM = Equation Input Mode ; Ref : https://47calc.com/doc/C47/Reference/C47_Equation_editor.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_NEW_page_1.pdf
New identity matrix	Command		IDENT	M.IDENT	Matrix operations	Create new identity matrix with Y rows and X columns
New matrix	Command (submnu)		NEW	M.NEW	Matrix operations	Create new matrix with Y rows and X columns
Newtonian constant of gravitation	Constant		G		Constants	Constant # 13 G c.grav.nwt = +6.6743 × 10 ⁻¹¹ (Unit : m ³ /kg.s ²)
Next fit	Command (cyclic, nonpgm)		NXTFIT		Plotting and curve fitting	Assess next curve fitting (cyclic)
Next prime	Function (monadic)		NEXTP	NEXTP	Mathematics	Next prime of the integer X (Info : Prime numbers are calculated only if X < 10 ³⁰⁸ , or NEXTP raises Error 1 -- An argument exceeds the function domain (may depend on flag CPXRES and SPCRES))
nmi to km	Function (monadic, linked)		nmi→km		Distance conversions	Convert nautical mile to kilometre (TI : km:)
nmi to m	Function (monadic, linked)		nmi→m		Distance conversions	Convert nautical mile to metre (TI : m:)
nmi to mi	Function (monadic, linked)		nmi→mi		Distance conversions	Convert nautical mile to mile (TI : mi:)
nmi ² to km ²	Function (monadic, linked)		nmi ² →km ²		Area conversions	Convert square nautical mile to square kilometre (TI : km ² :)
No	Command		NO		User interface	Respond : No
No operation	Command (PEM)		NOP	NOP	Programming	No operation (empty step) ; Keyboard longestpress [Σ+]
Nominal mean angular velocity of the Earth	Constant		ω _⊕		Constants	Constant # 76 ω _⊕ vangl.earth = +7.292115 × 10 ⁻⁵ (Unit : rad/s)
Nominal TVM annual rate	Function (monadic)		EFF→I/a	EFF→I/a	Financial	Calculate Nominal TVM annual rate from the Effective TVM annual rate in X and copy value to I/a (variable I%/a) -- see Formula_EFFT0I.png : https://47calc.com/doc/Images/Formula_EFFT0I.png (TI : I%/a = I%YR = NAR =)
Non-zero imaginary part?	Command (logical)		Im≠0?	Im≠0?	Programming	Test X has imaginary part not equal to zero
Non-zero real part?	Command (logical)		Re≠0?	Re≠0?	Programming	Test X has real part not equal to zero
NOR	Function (dyadic)		NOR	NOR	Bits and bytes	Logical not OR (bitwise)
Nor	Character		̄		Characters	Character $\bar{\cdot}$ (Fontcode : 22BD ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Norm	Function (monadic)		$\ x\ _p$	$\ x\ _p$	Matrix operations	Norm of vector or matrix in X with parameter p (trailing input) = 0, 1, 2, ..., 9, ∞ : 0 : Number of non-zeros of vector or matrix in X : $\ x\ _0 = \sum_i I(a_i \neq 0)$, where I is the indicator function, 1 if true, 0 if false ; 1 : Maximum column sum of absolute element values of a matrix in X : $\ x\ _1 = \max_j \sum_i a_{ij} $; 2 : Euclidean magnitude of a vector in X or Frobenius norm of a matrix in X : $\ x\ _2 = \sqrt{\sum_i \sum_j a_{ij} ^2}$; 3 : $\ x\ _3 = \sqrt[3]{\sum_i \sum_j a_{ij} ^3}$; ... ; 9 : $\ x\ _9 = \sqrt[9]{\sum_i \sum_j a_{ij} ^9}$; ∞ : Maximum row sum of absolute element values of a matrix in X : $\ x\ _\infty = \max_i \sum_j a_{ij} $ (TAM : $\ x\ _p$ _ TamNorm menu ; Info : parameter 0, 1, 2, ..., 9, ∞ (use [TamNorm.1] F2 to enter ∞))
Normal & Log normal distribution	MENU		[NormL:]	NormL:	Probability (real)	Normal & Log normal probability distribution (continuous) (TI : RegM = μ = ; RegS = σ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Norml_page_1.pdf
Normal cdf (lower)	Function (monadic)		NormL _⬇	NormL _⬇	Probability (real)	Normal cumulative distribution (lower tail)
Normal cdf (upper)	Function (monadic)		NormL _⬆	NormL _⬆	Probability (real)	Normal cumulative distribution (upper tail)
Normal pdf	Function (monadic)		NormL _p	NormL _p	Probability (real)	Normal probability density function
Normal qf (inverse)	Function (monadic)		NormL ⁻¹	NormL ⁻¹	Probability (real)	Normal inverse cumulative distribution (quantile)
Normal-super-subscript	Setting (cyclic)	Normal	^{SUP} SUB		Text input	Cycle normal-super-subscript (locking) (Shortcut : alpha g[▲] / alpha g[▼] ; Info : button shows ^{SUP} SUB ; α^{SUP} ; α_{SUB})
NOT	Function (monadic)		NOT	NOT	Bits and bytes	Bitwise NOT
Not	Character		¬		Characters	Character ¬ (Fontcode : 00AC ₁₆)
Not a Number	Constant		NaN		Constants	Constant # 37 NaN not.a.nr = Not a number
Not a subset of	Character		⊄		Characters	Character ⊄ (Fontcode : 2284 ₁₆)
Not an element of	Character		∉		Characters	Character ∉ (Fontcode : 2289 ₁₆)
Not AND	Function (dyadic)		NAND	NAND	Bits and bytes	Logical not AND (bitwise)
Not equal to	Character		≠		Characters	Character ≠ (Fontcode : 2260 ₁₆)
Not parallel to	Character		⊥		Characters	Character ⊥ (Fontcode : 2226 ₁₆)
not-a-number?	Command (logical)		NaN?	NaN?	Programming	Test X is not-a-number
NQueens	User Program		NQueens		Test programs	NQueens example program, available to load from PROGRAMS/NQueens.p47, using READP -- see https://forum.swissmicros.com/viewtopic.php?p=34743#p34743 (Info : NQueens implementation for test purposes; modified from Calcman54's program)
NU	Character		N		Characters	Character N (Fontcode : 039D ₁₆ ; Info : press [▼] for v at [a...w.1] gF2)
nu	Character		ν		Characters	Character ν (Fontcode : 03BD ₁₆ ; Info : press [▲] for N at [A...Ω.1] gF2)
Nuclear magneton	Constant		μ _N		Constants	Constant # 71 μ _N magn.nucl = +5.0507837393 × 10 ⁻²⁷ (Unit : J/T)
Number base	Setting (pgm, stack)	OFF	#	→INT	Number bases	Set number base ; operates on all stack registers depending on BASE _{HP} (TAM : →INT __ TamNonReg menu ; #TAM shortcuts : B = BIN ; D = DEC ; ENTER = DEC ; H = HEX ; 0 = OCT ; Info : SBI is shown if flag SBfrac is SET ; exit base mode by .d, →I, [,] or CLRMOD (longerpress [EXIT])) ; Keyboard g[1/x]
Number base	Setting (pgm, stack)		→INT	→INT	Number bases	Set number base ; operates on all stack registers depending on BASE _{HP} (TAM : →INT __ TamNonReg menu ; #TAM shortcuts : B = BIN ; D = DEC ; ENTER = DEC ; H = HEX ; 0 = OCT ; Info : SBI is shown if flag SBfrac is SET ; exit base mode by .d, →I, [,] or CLRMOD (longerpress [EXIT]))
Number base	MENU		[BASE]	BASE	Number bases	Number base operations (Short integer (8.02-8.16)) (Split screen : Displaying value of X according to setting dSI (short integer split screen lines) : 0 : <none> ; 1 : HEX ; 2 : HEX/DEC ; 3 : HEX/BIN/DEC ; if flag BCD is SET, instead of HEX, BCD is displayed with subscript digits and followed by subscript _{bcd} ; Info : on BASE page 2, special indicators are used : ◇ : all group settings comply, ◇ : ≥1 group settings differ) ; Keyboard f[4] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_BASE_page_1.pdf
Number base (2)	MENU		[BASE2]	BASE2	Number bases	Alternative menu for number base operations (Short integer (8.02-8.16)) (Split screen : Displaying value of X according to setting dSI (short integer split screen lines) : 0 : <none> ; 1 : HEX ; 2 : HEX/DEC ; 3 : HEX/BIN/DEC ; if flag BCD is SET, instead of HEX, BCD is displayed with subscript digits and followed by subscript _{bcd}) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_BASE2_page_1.pdf
Number of bins	Command		nBINS		Plotting and statistics	Number of bins in histogram (TI : ↑BIN : ; ↓BIN : ; nBINS :)

FullName	Type	Default	Label	Catalog	Category	Extended description
Number of non-zeros	Function (monadic)		NNZ	NNZ	Matrix operations	Number of non-zeros of vector or matrix in X : $\ x\ _0 = \sum_i I(a_i \neq 0)$, where I is the indicator function, 1 if true, 0 if false (Info: If NNZ is selected from menu [TamNorm.1] fF2, it enters $\ x\ _p$ with parameter 0: Number of non-zeros of vector or matrix in X : $\ x\ _0 = \sum_i I(a_i \neq 0)$, where I is the indicator function, 1 if true, 0 if false)
Number sign	Symbol		#		Number bases and characters	Number sign, used for Short integer (8.02-8.16) base (Shortcut: alpha f[.] ; Info: Fontcode: 0023 ₁₆)
Number theory functions	MENU		[NumTh]	NumTh	Mathematics	Number theory functions -- see https://en.wikipedia.org/wiki/Divisor_function Docs: https://47calc.com/doc/C47/Menus/C47_Menu_NumTh_page_1.pdf
Number variables	MENU		[NUMBRS]	NUMBRS	Catalog	Auto-generated catalog of variables of the specified datatype: Number (0 ; 1.0-1.5 ; 2.0-2.5) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_NUMBRS_page_1.pdf
Number?	Command (logical)		NUMBR?	NUMBR?	Programming	Test type of X is Number (0 ; 1.0-1.5 ; 2.0-2.5) (Ref: https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Numeric entry	Flag	CLEAR	NUM.IN		Numeric input	SET for numeric entry; CLEAR for numeric entry inactive
Numlock	Setting	OFF	NUM		Numeric input	Switch on numlock; not programmable - in PEM, use flag NUM (Shortcut: alpha f[▲] / alpha f[▼])
Numlock	Flag	CLEAR	NUM		Numeric input	SET for numlock; CLEAR for numlock inactive
0	Character		0		Characters	Character 0 (Fontcode: 004F ₁₆) ; Keyboard alpha [E]
o	Character		o		Characters	Character o (Fontcode: 006F ₁₆) ; Keyboard alpha f[E]
o accute	Character		ó		Characters	Character ó (Fontcode: 00D3 ₁₆ ; Info: press [▼] for ó at [aintl.3] fF5)
o accute	Character		ó		Characters	Character ó (Fontcode: 00F3 ₁₆ ; Info: press [▲] for ó at [aintl.3] fF5)
o breve	Character		ô		Characters	Character ô (Fontcode: 014E ₁₆ ; Info: press [▼] for ô at [aintl.3] fF5)
o breve	Character		ô		Characters	Character ô (Fontcode: 014F ₁₆ ; Info: press [▲] for ô at [aintl.3] fF5)
o circumflex	Character		ö		Characters	Character ö (Fontcode: 00D4 ₁₆ ; Info: press [▼] for ö at [aintl.3] fF6)
o circumflex	Character		ö		Characters	Character ö (Fontcode: 00F4 ₁₆ ; Info: press [▲] for ö at [aintl.3] fF6)
o diaresis	Character		ö		Characters	Character ö (Fontcode: 00D6 ₁₆ ; Info: press [▼] for ö at [aintl.3] fF2)
o diaresis	Character		ö		Characters	Character ö (Fontcode: 00F6 ₁₆ ; Info: press [▲] for ö at [aintl.3] fF2)
o grave	Character		ø		Characters	Character ø (Fontcode: 00D2 ₁₆ ; Info: press [▼] for ø at [aintl.3] fF4)
o grave	Character		ø		Characters	Character ø (Fontcode: 00F2 ₁₆ ; Info: press [▲] for ø at [aintl.3] fF4)
o macron	Character		ō		Characters	Character ō (Fontcode: 014C ₁₆ ; Info: press [▼] for ō at [aintl.3] fF4)
o macron	Character		ō		Characters	Character ō (Fontcode: 014D ₁₆ ; Info: press [▲] for ō at [aintl.3] fF4)
o stroke	Character		ø		Characters	Character ø (Fontcode: 00D8 ₁₆ ; Info: press [▼] for ø at [aintl.3] fF3)
o stroke	Character		ø		Characters	Character ø (Fontcode: 00F8 ₁₆ ; Info: press [▲] for ø at [aintl.3] fF3)
o tilde	Character		õ		Characters	Character õ (Fontcode: 00D5 ₁₆ ; Info: press [▼] for õ at [aintl.3] fF1)
o tilde	Character		õ		Characters	Character õ (Fontcode: 00F5 ₁₆ ; Info: press [▲] for õ at [aintl.3] fF1)
Obelus	Character		÷		Characters	Character ÷ (Shortcut: alpha g[÷] ; Info: Fontcode: 00F7 ₁₆)
Oblique 1	Character		/		Characters	Character / (Fontcode: 2421 ₁₆)
Oblique 2	Character		/		Characters	Character / (Fontcode: 2422 ₁₆)
Oblique 3	Character		/		Characters	Character / (Fontcode: 2423 ₁₆)
Oblique 4	Character		/		Characters	Character / (Fontcode: 2426 ₁₆)
Octal	Setting (pgm)	OFF	OCT	OCT	Number bases	Convert X to octal and toggle octal mode; entering digits A-F switches the calculator to hexadecimal mode; when KEY _{A-F} is SET, the respective digit is included in the row 2 key's longpress preview cycle (Shortcut: #TAM [E] (0) ; Info: values are displayed with subscript 8)
Odd?	Command (logical)		ODD?	ODD?	Programming	Test X is odd and integer (test function INT? is true) (Ref: https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
OE	Character		œ		Characters	Character œ (Fontcode: 0152 ₁₆ ; Info: press [▼] for œ at [aintl.3] fF6)
oe	Character		œ		Characters	Character œ (Fontcode: 0153 ₁₆ ; Info: press [▲] for œ at [aintl.3] fF6)
Off	Command		OFF	OFF	System	Turn off calculator (Info: On the simulator, pressing OFF or quitting the application saves the calculator state in: backup.cfg) ; Keyboard f[EXIT]
Old (matrix)	Command		OLD	M.OLD	Matrix operations	Revert to old element (while editing)
OMEGA	Character		Ω		Characters	Character Ω (Fontcode: 03A9 ₁₆ ; Info: press [▼] for ω at [a...ω.2] fF3)
omega	Character		ω		Characters	Character ω (Fontcode: 03C9 ₁₆ ; Info: press [▲] for Ω at [A...Ω.2] fF3)
omega tonos	Character		ώ		Characters	Character ώ (Fontcode: 03CE ₁₆)
OMICRON	Character		ο		Characters	Character ο (Fontcode: 039F ₁₆ ; Info: press [▼] for ο at [a...ω.1] gF4)
omicron	Character		ο		Characters	Character ο (Fontcode: 03BF ₁₆ ; Info: press [▲] for ο at [A...Ω.1] gF4)
omicron tonos	Character		ό		Characters	Character ό (Fontcode: 03CC ₁₆)
OMP209	User Program		OMP209		Test programs	OMP209 test program, available to load from PROGRAMS/ALLPGMS/OMP209.p47, using READP (after unzipping resources/testPgms.zip)

FullName	Type	Default	Label	Catalog	Category	Extended description
OMp212	User Program		OMp212		Test programs	OMp212 test program, available to load from PROGRAMS/ALLPGMS/OMp212.p47, using READP (after unzipping resources/testPgms.zip)
OMp224	User Program		OMp224		Test programs	OMp224 test program, available to load from PROGRAMS/ALLPGMS/OMp224.p47, using READP (after unzipping resources/testPgms.zip)
OMp226	User Program		OMp226		Test programs	OMp226 test program, available to load from PROGRAMS/ALLPGMS/OMp226.p47, using READP (after unzipping resources/testPgms.zip)
OMp233	User Program		OMp233		Test programs	OMp233 test program, available to load from PROGRAMS/ALLPGMS/OMp233.p47, using READP (after unzipping resources/testPgms.zip)
OMp235	User Program		OMp235		Test programs	OMp235 test program, available to load from PROGRAMS/ALLPGMS/OMp235.p47, using READP (after unzipping resources/testPgms.zip)
OMp237	User Program		OMp237		Test programs	OMp237 test program, available to load from PROGRAMS/ALLPGMS/OMp237.p47, using READP (after unzipping resources/testPgms.zip)
Open menu	Command (PEM)		OPENM	OPENM	Programming	Open menu by (catalog) name, optionally followed by ϵ and page number (TAM : OPENM _ TamMenu menu ; Info : ϵ is on [Misc.1]F1 ; menu name and page can be stored in a register or variable ; Error 59 -- Undefined menu name -- may be raised)
Operator a	Command		a	op_a	Electrical engineering	Insert value of $1 \angle 120^\circ$
Operator a ²	Command		a ²	op_a ²	Electrical engineering	Insert value of $1 \angle 240^\circ$
OR	Function (dyadic)		OR	OR	Bits and bytes	Bitwise OR
Or	Character		v		Characters	Character v (Fontcode : 2228 ₁₆)
Orthogonal fit	Setting	OFF	OrthoF	OrthoF ☐	Plotting and curve fitting	Select orthogonal curve fitting (used in PLSTAT) ; deselects other curve fit settings (Info : Sets <BestF> to 0 ; TI : L.R. selected to OrthoF)
Orthogonal polynomials	MENU		[Orthog]	ORTHOG	Mathematics	Orthogonal polynomials Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Orthog_page_1.pdf
Overflow	Setting	OFF	OVERFL	OVERFL ☐	Bits and bytes	Switch on overflow ; not programmable - in PEM, use flag OVERFL (Info : SBI ° is shown if flag SBoc is SET)
Overflow	Flag	CLEAR	OVERFL		Bits and bytes	SET for overflow ; CLEAR for no overflow (Info : SBI ° is shown if flag SBoc is SET)
Overflow Carry	Character		$\frac{0}{\circ}$		Characters	Character $\frac{0}{\circ}$ (Fontcode : 00A9 ₁₆)
oz to g	Function (monadic, linked)		oz→g		Mass conversions	Convert ounce to gram (TI : g)
P	Character		P		Characters	Character P (Fontcode : 0050 ₁₆) ; Keyboard alpha [7]
p	Character		p		Characters	Character p (Fontcode : 0070 ₁₆) ; Keyboard alpha f [7]
P.FN menu reset	Command		PFN.R		Cleanup	Reset all P.FN user assignments (and open menu) (TI : P.FN menu reset to default)
P1	User Program		P1		Test programs	P1 Time value of money program, available to load from PROGRAMS/tvm/P1.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P10	User Program		P10		Test programs	P10 Time value of money program, available to load from PROGRAMS/tvm/P10.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P11	User Program		P11		Test programs	P11 Time value of money program, available to load from PROGRAMS/tvm/P11.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P12	User Program		P12		Test programs	P12 Time value of money program, available to load from PROGRAMS/tvm/P12.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P12a	User Program		P12a		Test programs	P12a Time value of money program, available to load from PROGRAMS/tvm/P12a.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P1b	User Program		P1b		Test programs	P1b Time value of money program, available to load from PROGRAMS/tvm/P1b.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P2	User Program		P2		Test programs	P2 Time value of money program, available to load from PROGRAMS/tvm/P2.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P3	User Program		P3		Test programs	P3 Time value of money program, available to load from PROGRAMS/tvm/P3.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)

FullName	Type	Default	Label	Catalog	Category	Extended description
P4	User Program		P4		Test programs	P4 Time value of money program, available to load from PROGRAMS/tvm/P4.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P5	User Program		P5		Test programs	P5 Time value of money program, available to load from PROGRAMS/tvm/P5.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P5b	User Program		P5b		Test programs	P5b Time value of money program, available to load from PROGRAMS/tvm/P5b.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P6	User Program		P6		Test programs	P6 Time value of money program, available to load from PROGRAMS/tvm/P6.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P6b	User Program		P6b		Test programs	P6b Time value of money program, available to load from PROGRAMS/tvm/P6b.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P7	User Program		P7		Test programs	P7 Time value of money program, available to load from PROGRAMS/tvm/P7.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P8	User Program		P8		Test programs	P8 Time value of money program, available to load from PROGRAMS/tvm/P8.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
P9	User Program		P9		Test programs	P9 Time value of money program, available to load from PROGRAMS/tvm/P9.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
Pa to atm	Function (monadic, linked)		Pa→atm		Pressure conversions	Convert Pascal to atmosphere (TI : atm:)
Pa to bar	Function (monadic, linked)		Pa→bar		Pressure conversions	Convert Pascal to bar (TI : bar:)
Pa to inHg	Function (monadic, linked)		Pa→inHg		Pressure conversions	Convert Pascal to inch of Mercury (TI : inHg:)
Pa to lbf/ft²	Function (monadic, linked)		Pa→lbf/ft²		Pressure conversions	Convert Pascal to pound force per square foot (TI : lbf/ft²:)
Pa to mmHg	Function (monadic, linked)		Pa→mmHg		Pressure conversions	Convert Pascal to millimetre of Mercury (TI : mmHg:)
Pa to psi	Function (monadic, linked)		Pa→psi		Pressure conversions	Convert Pascal to pound force per square inch (TI : psi:)
Pa to torr	Function (monadic, linked)		Pa→torr		Pressure conversions	Convert Pascal to torr (TI : torr:)
Pair of parentheses	Character		()		Characters	Characters ()
Pall	User Program		Pall		Test programs	Pall Time value of money program, available to load from PROGRAMS/tvm/Pall.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)
Parabolic fit	Setting	OFF	ParabF	ParabF ☐	Plotting and curve fitting	Set <BestF> to include Parabolic curve fitting : $y = a_0 + a_1x + a_2x^2$; deselects OrthoF (Info : Adds 64 to <BestF> ; TI : L.R. selected to <BestF>.)
Parallel impedance	Function (dyadic)				Electrical engineering and characters	Parallel impedance : $(X \times Y) / (X + Y)$
Parallel to	Character				Characters	Character (Fontcode : 2225 ₁₆)
Pareto distribution	MENU		[Pareto:]	Pareto:	Probability (real)	Pareto probability distribution (continuous) -- see https://en.wikipedia.org/wiki/Pareto_distribution#Pareto_types_I-IV (TI : RegM = μ ; RegS = σ ; RegQ = α) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Pareto_page_1.pdf
Pareto type I cdf (lower)	Function (monadic)		Prto _L	Prto _L	Probability (real)	Pareto type I cumulative distribution (lower tail)
Pareto type I cdf (upper)	Function (monadic)		Prto _U	Prto _U	Probability (real)	Pareto type I cumulative distribution (upper tail)
Pareto type I pdf	Function (monadic)		Prto _p	Prto _p	Probability (real)	Pareto type I probability density function
Pareto type I qf (inverse)	Function (monadic)		Prto ₁	Prto ₁	Probability (real)	Pareto type I inverse cumulative distribution (quantile)
Pareto type II cdf (lower)	Function (monadic)		Prto2 _L	Prto2 _L	Probability (real)	Pareto type II cumulative distribution (lower tail)
Pareto type II cdf (upper)	Function (monadic)		Prto2 _U	Prto2 _U	Probability (real)	Pareto type II cumulative distribution (upper tail)
Pareto type II pdf	Function (monadic)		Prto2 _p	Prto2 _p	Probability (real)	Pareto type II probability density function
Pareto type II qf (inverse)	Function (monadic)		Prto2 ₁	Prto2 ₁	Probability (real)	Pareto type II inverse cumulative distribution (quantile)
Partial differential	Character		∂		Characters	Character ∂ (Fontcode : 2202 ₁₆)
Pause	Command (PEM)		PAUSE	PAUSE	Programming	Pause program for number of ticks ; range is nn in [0, 98], one tick is 100 ms ; special case : nn = 99 results in sleep mode (TAM : PAUSE __ TamNonReg menu)
pc to m	Function (monadic, linked)		pc→m		Distance conversions	Convert parsec to metre (TI : m:)
Pct of sum and delta pct to mean	Function (monadic)		%Σ,Δ% $\bar{x}_1$	%Σ,Δ% $\bar{x}_1$	Financial	Percentage of x to Σx and delta percentage to mean using statistics matrix (STATS) (TI : Δ% : ; % :)

FullName	Type	Default	Label	Catalog	Category	Extended description
Percent	Function (dyadic)		%	%	Financial	X Percent of Y, keeping Y on stack -- see Formula_PC.png : https://47calc.com/doc/Images/Formula_PC.png ; Keyboard f[RCL]
Percent	Character		%		Characters	Character % (Fontcode : 0025 ₁₆)
Percentage of sum	Function (monadic)		%Σ	%Σ	Financial	Percentage of x to Σx : %Σ = 100 x / Σx -- see Formula_PCSIGMA.png : https://47calc.com/doc/Images/Formula_PCSIGMA.png (TI : % :)
Percentage of total	Function (dyadic)		%T	%T	Financial	Percentage of total, keeping Y on stack -- see Formula_PCT.png : https://47calc.com/doc/Images/Formula_PCT.png (TI : % :)
Percentile	Command		x%ILE	x%ILE	Summary statistics	Percentile (TI : pctl _x = ; pctl _y =)
Permutations	Function (dyadic)		P _{yx}	PERM	Probability	Permutations of X out of Y
Perpendicular	Character		⊥		Characters	Character ⊥ (Fontcode : 22A5 ₁₆)
Perpendicular distance	Function (dyadic)		x-ȳ ₂	x-ȳ ₂	Vector operations	Perpendicular distance between Real matrices or vectors ; Complex matrices or vectors
Peta	Command (nonpgm)		-P		Numeric input	Factor 10 ¹⁵
Peta binary	Command (nonpgm)		-Pi		Numeric input	Factor 10 ⁵⁰
Pgm begin	Character		⌞		Characters	Character ⌞ (Fontcode : 242B ₁₆)
PHI	Character		Φ		Characters	Character Φ (Fontcode : 03A5 ₁₆ ; Info : press [▼] for φ at [α...ω.2]F6)
phi	Character		φ		Characters	Character φ (Fontcode : 03C6 ₁₆ ; Info : press [▲] for Φ at [A...Ω.2]F6)
phi-math	Character		ϕ		Characters	Character ϕ (Fontcode : 03D5 ₁₆)
Physics or Math	Flag	CLEAR	3DPHYS		Vector operations	SET for Physics conventions in spherical polar vectors ; CLEAR for Math conventions in spherical polar vectors (Info : The notation convention is indicated by the TI subscript of the spherical polar vector : p for Physics, m for Math (determines ordering of vector elements, works on whole stack))
Physics or Math	Setting (pgm)	OFF	3DPHYS		Vector operations	Switch on Physics conventions in spherical polar vectors (Info : The notation convention is indicated by the TI subscript of the spherical polar vector : p for Physics, m for Math (determines ordering of vector elements, works on whole stack))
pi	Command		π		Constants	Enter value of pi on the stack ; Keyboard f[R+]
Pi	Character		Π		Characters	Character Π (Fontcode : 03A0 ₁₆ ; Info : press [▼] for π at [α...ω.1]gF5)
pi	Symbol		π		Mathematics and characters	Greek character π (Shortcut : alpha g[R+] ; Info : Fontcode : 03C0 ₁₆ ; press [▲] for Π at [A...Ω.1]gF5)
pi	Constant		π		Constants	Constant # 84 π pi = +3.141592653589793238462643383279503
pico	Command (nonpgm)		-p		Numeric input	Factor 10 ⁻¹²
PICTURE	User Program		PICTURE		Test programs	PICTURE test program, available to load from PROGRAMS/ALLPGMS/PICTURE.p47, using READP (after unzipping resources/testPgms.zip)
pint _{uk} to mℓ	Function (monadic, linked)		pint _{uk} →mℓ		Volume conversions	Convert UK imperial pint to millilitre (TI : mℓ:)
pint _{us} to mℓ	Function (monadic, linked)		pint _{us} →mℓ		Volume conversions	Convert US liquid pint to millilitre (TI : mℓ:)
Pipe ; Bar	Character				Characters	Character (Fontcode : 007C ₁₆)
Planck	Character		h		Characters	Character h (Fontcode : 210E ₁₆)
Planck / 2pi	Character		ħ		Characters	Character ħ (Fontcode : 210F ₁₆)
Planck constant	Constant		h		Constants	Constant # 19 h c.planck = +6.62607015 × 10 ⁻³⁴ (Unit : Js)
Planck length	Constant		l _{PL}		Constants	Constant # 23 l _{PL} len.planck = +1.616255 × 10 ⁻³⁵ (Unit : m)
Planck mass	Constant		m _{PL}		Constants	Constant # 29 m _{PL} mass.planck = +2.176434 × 10 ⁻⁸ (Unit : kg)
Planck temperature	Constant		T _P		Constants	Constant # 52 T _P temp.planck = +1.416784 × 10 ³² (Unit : K)
Planck time	Constant		t _{PL}		Constants	Constant # 53 t _{PL} time.planck = +5.391247 × 10 ⁻⁴⁴ (Unit : s)
Play (BUZZ) sounds	Command (HW)		PLAY	PLAY	Input-Output	Play (BUZZ) sounds using input from nx3 or nx2 matrix variable having rows : [frequency, duration, volume] (Hz, ms, volume element is optional) ; hardware only (TAM : PLAY __ TamLabel menu ; Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator)
Plot (RPN)	MENU (item)		[PLT f]	PLT f	RPN Calculus and plotting	Plot the RPN program (with MVAR variables) selected with TamLbOnly menu ; presents menu for variable selection ; in Program Entry Mode, the RPN program must be specified by PGMLT and the variable to plot for using the TamVarOnly menu (TAM : PLT f _ TamLbOnly menu (uses TamVarOnly menu in PEM, to specify variable to plot for) ; Info : in Program Entry Mode, use PAUSE, SNAP or PLTFCS to view the plot ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PLTf_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Plot functions	MENU (item)		[PLTFCNS]	PLTFCNS	Plotting	Plot functions (programmable), displaying graph, value/tick, lower left and upper right coordinate and additional info according to settings ; displays plot options menu (Info : Please note that this item is in development -- Error 59 : Undefined menu name -- may be raised ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PLTFCNS_page_1.pdf
Plot imaginary part	Flag	CLEAR	PLimp		Plotting	SET for plotting imaginary part; CLEAR for plotting real part (Info : PLimp and PLCxp are linked (both cannot be SET at the same time))
Plot imaginary part	Setting	OFF	IMPLT		Plotting	Switch on plotting imaginary part ; not programmable - in PEM, use flag PLimp (Info : IMPLT and CXPLT are linked (both cannot be ON at the same time))
Plot statistics	MENU (item)		[PLSTAT]	PLSTAT	Plotting and statistics	Plot statistics matrix (STATS, programmable) (TI : Calculating graph coordinates ... may be shown when plotting the statistics matrix ; Info : in Program Entry Mode, use PAUSE, SNAP or PLTFCNS to view the plot (PLTFCNS also displays the plot options menu) ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS ; Ref : https://47calc.com/doc/Application%20Notes/AN0003_C47_JM_Graphing.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PLSTAT_page_1.pdf
Plotting	MENU		[PLOT]	PLOT	Plotting and summation	Plotting and summation functions (Info : When SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS) ; Keyboard g [÷] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PLOT_page_1.pdf
Plus	Character		+		Characters	Plus (Shortcut : alpha g [+]; Info : Fontcode : 002B ₁₆)
Plus infinity	Constant		+∞		Constants	Constant # 78 +∞ inf.plus = +∞
Plus markers	Setting	OFF	PLUS		Plotting	Switch on plus markers ; not programmable - in PEM, use flag PLplus (Info : If PLUS is switched ON, BOX and CROSS are switched OFF ; LINE is switched ON when all three curve markers are deselected)
Plus markers	Flag	CLEAR	PLplus		Plotting	SET for plus markers; CLEAR for plus markers inactive (Info : If PLplus is SET, PLbox and PLCros are CLEARED ; PLine is SET when all three curve markers are deselected)
Plus-minus	Character		±		Characters	Character ± (Shortcut : alpha g [+/-]; Info : Fontcode : 00B1 ₁₆)
point to mm	Function (monadic, linked)		point→mm		Distance conversions	Convert point to millimetre (TI : mm)
Poisson cdf (lower)	Function (monadic)		Poiss _Δ	Poiss _Δ	Probability (int)	Poisson cumulative distribution (lower tail)
Poisson cdf (upper)	Function (monadic)		Poiss _Δ	Poiss _Δ	Probability (int)	Poisson cumulative distribution (upper tail)
Poisson distribution	MENU		[Poiss:]	Poiss:	Probability (int)	Poisson probability distribution (discrete) -- see https://en.wikipedia.org/wiki/Poisson_distribution#Definitions (TI : RegR = λ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Poiss_page_1.pdf
Poisson pmf	Function (monadic)		Poiss _p	Poiss _p	Probability (int)	Poisson probability mass function
Poisson qf (inverse)	Function (monadic)		Poiss ⁻¹	Poiss ⁻¹	Probability (int)	Poisson inverse cumulative distribution (quantile)
Polar (Character)	Character		⊙		Characters	Character ⊙ (Fontcode : 2299 ₁₆)
Polar notation	Setting (pgm)	OFF	POLAR	POLAR ⊙	Complex and coordinates	Switch on polar notation (Info : SBI L ; ⊙ is shown if flag SBcpX is SET)
Polar notation	Flag	CLEAR	POLAR		Complex and coordinates	SET for polar notation; CLEAR for rectangular notation (Info : SBI L ; ⊙ is shown if flag SBcpX is SET)
Polynomial 4th degree	Function (monadic)		Poly4		Mathematics	Create polynomial : a4 × x ⁴ + a3 × x ³ + a2 × x ² + a1 × x + a0
Pop local registers	Command (PEM)		PopLR	PopLR	Programming	Pop local registers (no return to calling routine)
Population standard deviation	Command		σ	σ	Summary statistics	Population standard deviation -- see Formula_STDDEV.png : https://47calc.com/doc/Images/Formula_STDDEV.png (TI : σ _x = ; σ _y =)
Pound	Character		£		Characters	Character £ (Fontcode : 00A3 ₁₆)
Power conversions	MENU		[Power:]	Power:	Power conversions	Convert between units of power (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons; CLEAR for <from> →↔ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Power_page_1.pdf
Power fit	Setting	OFF	PowerF	PowerF □	Plotting and curve fitting	Set <BestF> to include Power curve fitting : y = a0 x ^{a1} ; deselects OrthoF (Info : Adds 8 to <BestF> ; TI : L.R. selected to <BestF>.)
Power symbol	Character		⓪		Characters	Character ⓪ (Fontcode : 23FB ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Precision	Command		S _{mi}	S _{mi}	Measurement	Precision of measuring instrument investigated, requires 30 data pairs -- see https://blog.minitab.com/en/real-world-quality-improvement/orthogonal-regression-testing-the-equivalence-of-instruments (TI : S _{mi} =)
Preferences	MENU		[PREF]	PREF	System	System preferences (Info : R47 menu PREF is replaced by MODE ; Ref : https://47calc.com/doc/Application%20Notes/AN0028_C47_R47_JM_Configurability_Tour.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PREF_page_1.pdf
Prefixes (UNIT)	MENU		[Prefix]	Prefix	Numeric input	Prefixes for UNIT mode Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Prefix_page_1.pdf
Pressure loads conversions	MENU		[PLoads:]	PLoads:	Pressure conversions	Convert between units of pressure loads ; typical loads presented as pressures (Info : Flag CONV _{HP} may be SET for <to> <-> <to> unit conversion buttons ; CLEAR for <from> > < <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PLoads_page_1.pdf
Primality test	Command (logical)		PRIME?	PRIME?	Programming	Test X is a prime number (must be integer) -- see https://en.wikipedia.org/wiki/Miller%E2%80%93Rabin_primality_test (Info : Miller-Rabin probabilistic primality test is used (25 repetitions) ; PRIME? is correct up to 3 317 044 064 679 887 385 961 980 ; above that limit there are no false negatives, but there is a very low probability of false positives (albeit no known cases))
Prime	User Program		Prime		Test programs	Prime test program, available to load from PROGRAMS/ALLPGMS/Prime.p47, using READP (after unzipping resources/testPgms.zip)
Prime factors	Function (monadic)		FACTORS	FACTORS	Integers	Prime factors of the integer input in X ; factors are calculated in Long integer, stored as Real number (34 digits) and returned as a 2 row matrix (row 1 contains the primes, row 2 contains the powers) ; shows status, number being tested and last factor found ; interrupt by [EXIT] ; registers G, H, K are used to store the last three factors, in Long integer (register K stores the remaining number to be factorised after interrupt) -- see https://en.wikipedia.org/wiki/Pollard's_rho_algorithm ; https://en.wikipedia.org/wiki/Shanks%27s_square_forms_factorization (Info : Pollard's rho algorithm and Shanks's square forms factorization are used ; prime factors will be accurate up to 3 317 044 064 679 887 385 961 980 ; for input values > 34 digits, the long integer factors are saved in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; during execution, status info may be shown: Factors: Small prime trial: p = Factors: Perfect Sq trial: p = Factors: Shanks/Pollard↑: n = Factors: Shanks/Pollard↓: n =)
Print all items	Command (SIM)		☰ITEMS		Printing	Print all items (for testing purposes on simulator only, not available on hardware) (Info : [EXIT] or [R/S] can be pressed at any time to stop the listing ; If ☰OFF, writes all items to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ☰ is shown if flag SBprn is SET)
Print all registers	Command		☰ALLr	☰ALLr	Printing	Print all registers, labeled ; prints a listing of all global and currently allocated local registers (if any) (Info : [EXIT] or [R/S] can be pressed at any time to stop the listing ; If ☰OFF, writes all registers to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ☰ is shown if flag SBprn is SET)
Print alpha	Command		☰α	☰α	Printing	Print contents of register or variable as text (Info : If ☰OFF, ☰α writes alpha to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ☰ is shown if flag SBprn is SET)
Print Alpha register	Command (42)		42PRA	42PRA	Compatibility	Print contents of Alpha register (default K) as text ; this is a HP-42S/DM42(n) calculator compatible command (Info : If ☰OFF, 42PRA writes alpha to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ☰ is shown if flag SBprn is SET)
Print byte	Command		☰#	☰#	Printing	Print single byte (value 0-255), to be used as character or ESC sequence (TAM : ☰# ___ TamNonReg menu ; Info : SBI ☰ is shown if flag SBprn is SET)
Print byte	Command (old)		>☰#<		Printing	Old version of the command ☰# that used a different programming parameter (Info : May be found in older user programs, use ☰# on [PRINT.1]ff3 instead)
Print character	Command		☰CHAR	☰CHAR	Printing	Print single character from Unicode value specified in a register or variable (TAM : ☰CHAR ___ Tam menu ; Info : only characters in the C47 standard font are supported ; SBI ☰ is shown if flag SBprn is SET)

FullName	Type	Default	Label	Catalog	Category	Extended description
Print character	Command (old)		>▯CHAR<		Printing	Old version of the command ▯CHAR that used a different programming parameter (Info : May be found in older user programs, use ▯CHAR on [PRINT.1] fF5 instead)
Print column	Command		▯TAB	▯TAB	Printing	Position print head to print column nnn (HP-82240 : 1-166 columns, Martel : 1-384 columns) (TAM : ▯TAB ____ Tam menu ; Info : SBI ▯ is shown if flag SBprn is SET)
Print column	Command (old)		>▯TAB<		Printing	Old version of the command ▯TAB that used a different programming parameter (Info : May be found in older user programs, use ▯TAB on [PRINT.2] F5 instead)
Print LCD	Command (strike)		▯LCD	▯LCD	Printing	Print LCD display ; on the Martel, the full LCD can be printed, but on the 82240 this has not been implemented yet ; note that printing graphics is slow (Info : If ▯OFF, ▯LCD works like SNAP : writes LCD screenshot to file SCREENS/<YYYYMMDD-HHMMSS00>.bmp and writes stack to file DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ is shown if flag SBprn is SET)
Print list	Command (nonpgm)		▯LIST	▯LIST	Printing	Print specified number of lines of current program (TAM : ▯LIST ____ TamNonReg menu ; Info : [EXIT] or [R/S] can be pressed at any time to stop the listing ; in printer mode Trace, the program listing is printed in condensed form ; SBI ▯ is shown if flag SBprn is SET)
Print port active	Setting	OFF	PRNTR	PRNTR ☐	Printing	Switch on infrared print port active ; not programmable
Print port active	Flag (system)	CLEAR	▯ACT		Printing	SET for infrared print port active ; CLEAR for infrared print port inactive (Info : If flag ▯ACT is SET, the infrared port is enabled ; if CLEAR, the infrared port is disabled)
Print program	Command (nonpgm)		▯PROG	▯PROG	Printing	Print program, with date and time printed at the top of the listing (TAM : ▯PROG _ TamLbOnly menu ; Info : If ▯OFF, executes XPORTP ; [EXIT] or [R/S] can be pressed at any time to stop the listing ; in printer mode Trace, the program listing is printed in condensed form ; SBI ▯ is shown if flag SBprn is SET)
Print register or variable	Command		▯r	▯r	Printing	Print single register or variable, labeled with the register or variable name (TAM : ▯r __ Tam menu ; Info : if ▯OFF, writes register or variable to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ is shown if flag SBprn is SET)
Print registers	Command		▯REGS	▯REGS	Printing	Print registers, using range number in X (sss.nn means registers from sss through sss + nn - 1) (Info : [EXIT] or [R/S] can be pressed at any time to stop the listing ; If ▯OFF, writes registers to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ is shown if flag SBprn is SET)
Print stack	Command		▯STK	▯STK	Printing	Print stack registers, labeled, in TZYX or DCBATZYX order, depending on stack size set by SSIZE8 (Info : If ▯OFF, writes stack to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ ; 8 ; 4 is shown if flag SBprn is SET)
Print summation registers	Command		▯Σ	▯Σ	Printing	Print summation registers, labeled (Info : SBI ▯ is shown if flag SBprn is SET)
Print user items	Command		▯USER	▯USER	Printing	Print user items : variable names and values and a list of global program labels and program numbers (Info : [EXIT] or [R/S] can be pressed at any time to stop the listing ; SBI ▯ is shown if flag SBprn is SET)
Print X	Command		▯x	▯x	Printing	Print X register, marked with *** (Info : If ▯OFF, writes X to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ is shown if flag SBprn is SET)
Print X and Y	Command		▯xy	▯xy	Printing	Print X and Y registers on the same line, X on the left, Y on the right ; a 2xn or nx2 matrix is printed in two columns ; maximum 11 characters per column including number sign and separator(s) ; this is very limited for Complex numbers (Info : If ▯OFF, writes X and Y to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ is shown if flag SBprn is SET)
Print XFN	Command (strike)		▯XFN	▯XFN	Printing	Print all digits of X × Y + Z for Virtual compound data type (0/1.0-1.5 ; 0/1.0 ; 0/1.0), used in extended accuracy functions (menu XFCNS) (Info : If ▯OFF, writes XFN to file in DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; SBI ▯ is shown if flag SBprn is SET)
Printer	Character		▯		Characters	Character ▯ (Fontcode : 2399 ₁₆)
Printer advance	Command		▯ADV	▯ADV	Printing	Advance print paper, after printing the contents of the print buffer (Info : SBI ▯ is shown if flag SBprn is SET)

FullName	Type	Default	Label	Catalog	Category	Extended description
Printer control	MENU	82240			Printing	Printer control ; the menu button, e.g. on [PRINT.1]gF1 shows the default printer selected : 82240 (Info : Printing is available for new models and simulator, but is currently available on DM42 hardware only in some packages) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Printer_page_1.pdf
Printer mode	Setting (pgm, strike)	0	MODE	MODE	Printing	Set printer mode (TAM : MODE _ Tam menu ; Info : only mode 0 is implemented for the time being)
Printer mode Manual	Setting (pgm)	ON	MAN	MAN	Printing	Switch on printer mode Manual (flag TRACE is CLEAR and flag NORM is CLEAR) (Info : In MAN mode, the printer is idle and only prints when a print command is executed ; VIEW and AVIEW can also generate print output in this mode)
Printer mode Normal	Setting (pgm)	OFF	NORM	NORM	Printing	Switch on printer mode Normal (flag TRACE is CLEAR and flag NORM is SET) (Info : In NORM mode, the printer prints numbers and alpha strings that are keyed in, names of functions executed from the keyboard and output from print functions ; running programs only print from print commands or from PROMPT)
Printer mode Normal/Trace	Flag	CLEAR	NORM		Printing	SET for printer mode Normal (flag TRACE is CLEAR) or printer mode Stack trace (flag TRACE is SET) ; CLEAR for printer mode Manual (flag TRACE is CLEAR) or printer mode Trace (flag TRACE is SET) (Info : There are four print modes : MAN, NORM, TRACE and STRACE, which are set by two flags : TRACE and NORM)
Printer mode Stack trace	Setting (pgm)	OFF	STRACE	STRACE	Printing	Switch on printer mode Stack trace (flag TRACE is SET and flag NORM is SET) (Info : In STRACE mode, the printer prints the stack and alpha strings that are keyed in, names of functions executed from the keyboard, intermediate and final results and output from print functions ; if a program is running, each step is printed as it executes ; in this mode, program listings are printed in condensed form)
Printer mode Trace	Setting (pgm)	OFF	TRACE	TRACE	Printing	Switch on printer mode Trace (flag TRACE is SET and flag NORM is CLEAR) (Info : In TRACE mode, the printer prints numbers and alpha strings that are keyed in, names of functions executed from the keyboard, intermediate and final results and output from print functions ; if a program is running, each step is printed as it executes ; in this mode, program listings are printed in condensed form)
Printer mode Trace/Stack trace	Flag	CLEAR	TRACE		Printing	SET for printer mode Trace (flag NORM is CLEAR) or printer mode Stack trace (flag NORM is SET) ; CLEAR for printer mode Manual (flag NORM is CLEAR) or printer mode Normal (flag NORM is SET) (Info : There are four print modes : MAN, NORM, TRACE and STRACE, which are set by two flags : TRACE and NORM)
Printer width	Command (strike)		WIDTH	WIDTH	Printing	Number of columns used to print a string specified in a register or variable (Info : The number of columns returned depends on the printer type selected and (possibly) on MODE ; SBI is shown if flag SBprn is SET)
Printing	MENU		[PRINT]	PRINT	Printing	Printing functions (Info : Printing is available for new models and simulator, but is currently available on DM42 hardware only in some packages ; Ref : https://47calc.com/doc/Application%20Notes/AN0021_C47_R47_DL_Printing.pdf) ; Keyboard f[-] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PRINT_page_1.pdf
Printing enabled	Flag	CLEAR	EN		Printing	SET for printing enabled ; CLEAR for printing disabled
Printing OFF	Setting (pgm)	OFF	OFF	OFF	Printing	Switch off printing and print to file (selected commands) (Info : OFF clears flag ACT (infrared print port inactive) and EN (printing disabled) ; Error 63 -- Printing Is Disabled -- may be shown when executing a print command)
Printing ON	Setting (pgm)	OFF	ON	ON	Printing	Switch on printing and send commands to infrared print port (Info : ON sets flag ACT (infrared print port active) and EN (printing enabled))
Probability	MENU		[PROB]	PROB	Probability	Probability functions ; Keyboard f[x] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PROB_page_1.pdf
PROD	User Program		PROD		Test programs	PROD test program, available to load from PROGRAMS/ALLPGMS/PROD.p47, using READP (after unzipping resources/testPgms.zip)
Program running	SBI	Blank	(Running)		Status	Program running
Program waiting	SBI	Blank	(Waiting)		Status	Program waiting (user input required)

FullName	Type	Default	Label	Catalog	Category	Extended description
Programming	Command		PRGM		Programming	Enter Program Entry Mode (PEM) and activate menu P.FN (Info : Program Entry Mode starts in UPPERcase) ; Keyboard f[R/S]
Programming functions	MENU		[P.FN]	P.FN	Programming	User menu to quickly access selected menus and functions for programming ; all buttons are user assignable ('riveted' look) ; initially populated for basic programming options ; reset using PFN.R (Shortcut : PEM long [EXIT] ; PEM triple [f/g] (because either HOME [®] or MyM [®] is SET and either HOMEb or MyMb is SET) ; PEM longer [f/g] (because either HOME [®] or MyM [®] is SET and either HOMEb or MyMb is SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_P-FN_page_1.pdf
Programming functions 1	MENU		[P.FN1]	P.FN1	Programming	Programming functions 1 ; this is a normal menu, buttons are not user assignable (P.FN is) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_P-FN1_page_1.pdf
Programming functions 2	MENU		[P.FN2]	P.FN2	Programming	Programming functions 2 ; this is a normal menu, buttons are not user assignable (P.FN is) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_P-FN2_page_1.pdf
Programming functions 3	MENU		[P.FN3]	P.FN3	Programming	Programming functions 3 ; this is a normal menu, buttons are not user assignable (P.FN is) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_P-FN3_page_1.pdf
Programs	MENU (ASM)		[PROGS]	PROGS	Catalog	Auto-generated catalog of programs Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PROGS_page_1.pdf
Prompt	Command (PEM)		PROMPT	PROMPT	Programming	Halt program execution and view the register or variable contents (text string) in the top left part of the screen, without TI (for use in Program Entry Mode) ; if the contents include the $\hookleftarrow$ symbol, optionally display one or more TI's at the top, X, Y, Z line ; example: "top line = $\hookleftarrow$ X = $\hookleftarrow$ Y = $\hookleftarrow$ Z = " (TAM : PROMPT __ Tam menu ; Info : if $\hookleftarrow$ EN is SET, PROMPT will print when executed from the keyboard in NORM or TRACE ; in Program Entry Mode, $\hookleftarrow$ EN must be SET as well)
Prompt (42)	Command (42, PEM)		42PRMPT	42PRMPT	Compatibility	Halt program execution and view the register or variable contents (text string) in the top left part of the screen, without TI (for use in Program Entry Mode) ; if the contents include the $\hookleftarrow$ symbol, optionally display one or more TI's at the top, X, Y, Z line ; example: "top line = $\hookleftarrow$ X = $\hookleftarrow$ Y = $\hookleftarrow$ Z = " (uses Alpha register (default K)) (Info : if $\hookleftarrow$ EN is SET, 42PRMPT will print when executed from the keyboard in NORM or TRACE ; in Program Entry Mode, $\hookleftarrow$ EN must be SET as well)
Proper fractions	Setting	ON	PROPF	PROPF $\boxtimes$	Fractions	Switch on proper fractions (mixed fractions) ; not programmable - in PEM, use flag PROPF
Proper fractions	Flag	SET	PROPF		Fractions	SET for proper fractions (mixed fractions) ; CLEAR for improper fractions
Proper sigma function	Function (monadic)		σ_1^*	σ_1^*	Mathematics	Proper sigma function using either a FACTORS matrix or Long integer as input in X
Proportional to	Character		α		Characters	Character α (Fontcode : 221D ₁₆)
Proton / electron rest mass	Constant		m_p/m_e		Constants	Constant # 30 m_p/m_e r.prot.elec = +1.83615267342 $\times 10^{-3}$
Proton gyromagnetic ratio	Constant		γ_p		Constants	Constant # 59 γ_p r.gyro.prot = +2.6752218708 $\times 10^8$
Proton magnetic moment	Constant		μ_p		Constants	Constant # 70 μ_p mgmom.prot = +1.41060679545 $\times 10^{-26}$ (Unit : J/T)
Proton rest mass	Constant		m_p		Constants	Constant # 28 m_p mass.prot = +1.67262192595 $\times 10^{-27}$ (Unit : kg)
PSI	Character		ψ		Characters	Character ψ (Fontcode : 03A8 ₁₆ ; Info : press [▼] for ψ at [a...w.2] fF2)
psi	Character		ψ		Characters	Character ψ (Fontcode : 03C8 ₁₆ ; Info : press [▲] for Ψ at [A...Q.2] fF2)
psi to Pa	Function (monadic, linked)		psi $\rightarrow$ Pa		Pressure conversions	Convert pound force per square inch to Pascal (TI : Pa)
Put keycode in buffer	Command (PEM)		PUTK	PUTK	Programming	Copy keycode from register to keyboard buffer for immediate execution (TAM : PUTK __ Tam menu)
Put submatrix	Command		PUTM	M.PUTM	Matrix operations	Put submatrix in X into the indexed matrix starting at current element
pwr to dB	Function (monadic, linked)		pwr $\rightarrow$ dB		Convert pair conversions	Convert power ratio to decibel (TI : dB)
Q	Character		Q		Characters	Character Q (Fontcode : 0051 ₁₆) ; Keyboard alpha [8]
q	Character		q		Characters	Character q (Fontcode : 0071 ₁₆) ; Keyboard alpha f[8]
QR decomposition	Function (monadic)		M.QR	M.QR	Matrix operations	Decompose matrix in X into unitary (Q) in Y and upper (R) matrix in X (Info : QR factorisation, underlies eigenvalue computation)
qt _{UK} to ℓ	Function (monadic, linked)		qt _{UK} $\rightarrow$ ℓ		Volume conversions	Convert UK quart to litre (TI : ℓ)
qt _{UK} to m ℓ	Function (monadic, linked)		qt _{UK} $\rightarrow$ m ℓ		Volume conversions	Convert UK quart to millilitre (TI : m ℓ)
qt _{US} to ℓ	Function (monadic, linked)		qt _{US} $\rightarrow$ ℓ		Volume conversions	Convert US quart to litre (TI : ℓ)
qt _{US} to m ℓ	Function (monadic, linked)		qt _{US} $\rightarrow$ m ℓ		Volume conversions	Convert US quart to millilitre (TI : m ℓ)

FullName	Type	Default	Label	Catalog	Category	Extended description
Quadratic mean	Command		$\bar{x}_{RMS}$	$\bar{x}_{RMS}$	Summary statistics	Data evaluation of quadratic mean -- see Formula_XRMS.png : https://47calc.com/doc/Images/Formula_XRMS.png (TI : $\bar{x}_{RMS} =$; $\bar{x}_{RMS} =$)
Question mark	Character		?		Characters	Character ? (Fontcode : 003F ₁₆) ; Keyboard alpha [R/S]
Quiet	Flag	CLEAR	QUIET		System	SET for beeper disabled; CLEAR for beeper enabled (Info : Silences every sound source and clamps volume at both ends)
Quotation mark	Character		"		Characters	Character " (Fontcode : 0022 ₁₆)
R	Character		R		Characters	Character R (Fontcode : 0052 ₁₆) ; Keyboard alpha [g]
r	Character		r		Characters	Character r (Fontcode : 0072 ₁₆) ; Keyboard alpha f [g]
R accute	Character		$\acute{R}$		Characters	Character $\acute{R}$ (Fontcode : 0154 ₁₆ ; Info : press [▼] for $\acute{r}$ at [aintl.3]gF1)
r accute	Character		$\acute{r}$		Characters	Character $\acute{r}$ (Fontcode : 0155 ₁₆ ; Info : press [▲] for $\acute{R}$ at [aintl.3]gF1)
R caron	Character		$\check{R}$		Characters	Character $\check{R}$ (Fontcode : 0158 ₁₆ ; Info : press [▼] for $\check{r}$ at [aintl.3]gF2)
r caron	Character		$\check{r}$		Characters	Character $\check{r}$ (Fontcode : 0159 ₁₆ ; Info : press [▲] for $\check{R}$ at [aintl.3]gF2)
rad to deg	Function (monadic, linked)		rad→deg		Angle conversions	Convert radian to degree (untagged) (TI : deg:)
rad to grad	Function (monadic, linked)		rad→grad		Angle conversions	Convert radian to gradian (untagged) (TI : grad:)
rad/s to deg/s	Function (monadic, linked)		rad/s→deg/s		Angular/Speed conversions	Convert radian per second to degree per second (TI : deg/s:)
rad/s to RPM	Function (monadic, linked)		rad/s→RPM		Angular/Speed conversions	Convert radian per second to rotation per minute (TI : RPM:)
Radix	Symbol		.		Numeric input	Enter radix (default ".") (Info : Second press enters fraction mode ; set default symbol in menu RADIX from menu [DISP.1]gF2) ; Keyboard [.]
Radix comma	Setting (pgm)	OFF	COM,	RCOM, O	Display	Radix decimal comma
Radix dot	Setting (pgm)	OFF	DOT-	RDOT- O	Display	Radix decimal dot
Radix period	Setting (pgm)	ON	PER.	RPER. @	Display	Radix decimal period
Radix wide comma	Setting (pgm)	OFF	WCOM,	RWCOM, O	Display	Radix decimal wide comma (0 :)
Radix wide dot	Setting (pgm)	OFF	RWDOT •	RWDOT • O	Display	Radix decimal wide dot
Radix wide period	Setting (pgm)	OFF	WPER.	RWPER. O	Display	Radix decimal wide period
Raise to power	Symbol		^		Mathematics and characters	Raise to power (Shortcut : alpha g [¹ /x] ; Info : Fontcode : 005E ₁₆)
Random Long integer or Real	Function (dyadic)		RANI#	RANI#	Probability	Pseudo random Long integer or Real number generator with bounds X and Y ; uses the SEED (Info : Result is Long integer and range is [X, Y] when X and Y are long integer ; result is Real and range is [X, Y] when X or Y are Real ; bounds may be entered in either order)
Random number	Command		RAN#	RAN#	Probability	Pseudo random number generator (type Real) with bounds 0 and 1 ; uses the SEED (Info : Range is [0, 1] -- left closed, right open interval)
Ratio	Character		:		Characters	Character : (Fontcode : 2236 ₁₆)
Rational Q	Character		Q		Characters	Character Q (Fontcode : 211A ₁₆)
RB_OFF	Character		O		Characters	Character O (Fontcode : 25EF ₁₆)
RB_ON	Character		@		Characters	Character @ (Fontcode : 29BF ₁₆)
Read/load program	Command		READP	READP	Input-Output	Read/load program from WRITEP backup file (.p47) in FAT (TI : Program file loaded ; DMCP File open dialog ("Load Program" -- PROGRAMS/))
Real	MENU		[REAL]	REAL	Reals	Functions on Real numbers and Complex numbers ; Keyboard g [6] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_REAL_page_1.pdf
Real matrix or vector variables	MENU		[MATRS]	MATRS	Catalog	Auto-generated catalog of variables of the specified datatype : Real matrix or vector (6) or Complex matrix or vector (7.n) (Info : Matrix variables STATS and HISTO are also included in this menu, if created) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_MATRS_page_1.pdf
Real matrix or vector?	Command (logical)		MATR?	MATR?	Programming	Test type of X is Real matrix or vector (6) or Complex matrix or vector (7.n) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Real matrix or vector?	Command (logical)		Rmatx?	Rmatx?	Programming	Test type of X is Real matrix or vector (6) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Real number?	Command (logical)		R?	R?	Programming	Test type of X is Real number (1.0-1.5) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Real one	Command (TAM)		1.		Trailing input	Presented in menu TamCmp for comparisons (e.g. x< ?) to quickly enter 1.
Real part	Function (monadic)		Re	Re	Complex numbers	Real part of Complex number
Real product (RPN)	Command		$\prod_n$	$\prod_n$	RPN Calculus and plotting	Real product using RPN program ; $\prod_n$ (from Z to Y in steps of X) ; interrupt by [EXIT] -- see Formula_Pin.png : https://47calc.com/doc/Images/Formula_Pin.png (TAM : $\prod_n$... TamLbOnly menu ; Info : <from> ENTER <to> ENTER <step> $\prod_n$; displays Loop: n, current result, where n is iteration counter ; shown if flag MONIT is SET)
Real R	Character		R		Characters	Character R (Fontcode : 211D ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Real solver (stack limits)	Command (nonpgm)		realSlv _y ^x	realSlv _y ^x	Solver	Solve the algebraic expression (= 0) entered in the equation editor for real roots ; interrupt by [EXIT] ; tolerance set by SDIGS ; monitoring set by MONIT ; solver estimates set from stack (Y, X) (Info : Displays current evaluated number and iteration counter ; shown if flag MONIT is SET ; TI : Result Code = ; Accuracy ≈ ; <var> _{prev} = ; <var> =)
Real solver (variable limits)	Command (nonpgm)		realSlv	realSlv	Solver	Solve the algebraic expression (= 0) entered in the equation editor for real roots ; interrupt by [EXIT] ; tolerance set by SDIGS ; monitoring set by MONIT ; solver estimates set from variables (↓Est, ↑Est) (Info : Displays current evaluated number and iteration counter ; shown if flag MONIT is SET ; TI : Result Code = ; Accuracy ≈ ; <var> _{prev} = ; <var> =)
Real to Complex	Function (dyadic)		R→C	R→C	Complex numbers	Convert Real to Complex (in POLAR, using angle tag or ADM)
Real variables	MENU		[REALS]	REALS	Catalog	Auto-generated catalog of variables of the specified datatype : Real number (1.0-1.5) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_REALS_page_1.pdf
Real zero	Command (TAM)		0.		Trailing input	Presented in menu TamCmp for comparisons (e.g. x< ?) to quickly enter 0.
Recall	Command		RCL	RCL	Stack	Recall value from register or variable (TAM : RCL __ TamRcl menu (TamRclTVM when menu TVM is open) ; TI : Rnn: or '<var>' : (or R.nn: or or '<var>') ; Info : local registers .00-.nn etc. need to be allocated using LocR nn+1) ; Keyboard [RCL]
Recall and add	Function (monadic)		RCL+	RCL+	Stack	Recall register or variable and add X (Shortcut : [RCL] - [+] ; TAM : RCL+ __ TamRcl menu)
Recall and divide	Function (monadic)		RCL÷	RCL÷	Stack	Recall register or variable and divide by X (Shortcut : [RCL] - [÷] ; TAM : RCL÷ __ TamRcl menu)
Recall and load to countdown	Command (nonpgm)		RCL ^Σ		Stopwatch	Recall register value and load to countdown timer (decimal hours or time value)
Recall and load to timer	Command (nonpgm)		RCL		Stopwatch	Recall register value and load to stopwatch timer (decimal hours or time value) (Shortcut : [RCL] (STOPW active))
Recall and multiply	Function (monadic)		RCL×	RCL×	Stack	Recall register or variable and multiply by X (Shortcut : [RCL] - [×] ; TAM : RCL× __ TamRcl menu)
Recall and skip	Command (PEM)		RCL.SKIP	RCL.SKIP	Programming	Recall value from register or variable and skip the next instruction (intended use is after a test function, which if true, calls RCL.SKIP and jumps over the next program step, which means that step is executed only if the test function returns false) (Ref : https://47calc.com/doc/C47/Reference/C47_Skipping_program_steps.pdf)
Recall and subtract	Function (monadic)		RCL-	RCL-	Stack	Recall register or variable and subtract X (Shortcut : [RCL] - [-] ; TAM : RCL- __ TamRcl menu)
Recall config	Command		RCLCFG	RCLCFG	System	Recall config from register or variable (Shortcut : [RCL] - Config ; TAM : RCLCFG __ TamRcl menu ; Info : displays "Configuration data" in the stack)
Recall config	Command (TAM)		Config	RCLCFG	Trailing input	Presented in menu TamRcl to recall config from register or variable (Shortcut : [RCL] - Config ; TAM : RCLCFG __ TamRcl menu ; Info : displays "Configuration data" in the stack)
Recall current matrix index	Command		RCLIJ	RCLIJ	Matrix operations	Recall current matrix index (row I and column J) (Shortcut : [RCL] - ...IJ ; TI : M<name> :I _r = ; M<name> :J _c =)
Recall current matrix index	Command (TAM)		...IJ	RCLIJ	Trailing input	Presented in menu TamRcl to recall current matrix index (row I and column J) (Shortcut : [RCL] - ...IJ ; TI : M<name> :I _r = ; M<name> :J _c =)
Recall matrix element	Command		RCL _{EL}	RCL _{EL}	Matrix operations	Recall current element of indexed matrix (Shortcut : [RCL] - ...EL ; TI : M[I _r , J _c]=<name> [<row> <col>]=)
Recall matrix element	Command (TAM)		...EL	RCL _{EL}	Trailing input	Presented in menu TamRcl to recall current element of indexed matrix (Shortcut : [RCL] - ...EL ; TI : M[I _r , J _c]=<name> [<row> <col>]=)
Recall matrix element and go to next	Command		RCLSEQ	RCLSEQ	Matrix operations	Recall current element of indexed matrix, then increment column index J of indexed matrix ; wraps automatically (TI : M[I _r , J _c]=<name> [<row> <col>]=)
Recall maximum	Command		RCL↑	RCL↑	Stack	Recall maximum of X and register or variable (Shortcut : [RCL] - [▲] ; TAM : RCL↑ __ TamRcl menu)
Recall maximum	Command (TAM)		...Max	RCL↑	Trailing input	Presented in menu TamRcl to recall maximum of X and register or variable (Shortcut : [RCL] - [▲] ; TAM : RCL↑ __ TamRcl menu)
Recall minimum	Command		RCL↓	RCL↓	Stack	Recall minimum of X and register or variable (Shortcut : [RCL] - [▼] ; TAM : RCL↓ __ TamRcl menu)
Recall minimum	Command (TAM)		...Min	RCL↓	Trailing input	Presented in menu TamRcl to recall minimum of X and register or variable (Shortcut : [RCL] - [▼] ; TAM : RCL↓ __ TamRcl menu)

FullName	Type	Default	Label	Catalog	Category	Extended description
Recall stack	Command		RCLS	RCLS	Stack	Recall complete stack from 4 or 8 registers (Shortcut : [RCL] - Stack ; TAM : RCLS __ TamRcl menu)
Recall stack	Command (TAM)		Stack	RCLS	Trailing input	Presented in menu TamRcl to recall complete stack from 4 or 8 registers (Shortcut : [RCL] - Stack ; TAM : RCLS __ TamRcl menu)
Recall to Alpha register	Command (42)		42ARCL	42ARCL	Compatibility	Append contents of register or variable (formatted according to the display settings) to Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command (TAM : 42ARCL __ Tam menu ; for the 42-compatible alpha functions and commands, the Alpha register (default K) is limited to 44 characters ; Error 54 -- No string in alpha register -- may be raised)
Recall triple I	Command		3RCL _{I93}	3RCL _{I93}	Electrical engineering	Push R93, R94, R95 to X, Y, Z ; used in menu ELEC and as dedicated registers for Virtual compound data types, as a "Triplet" stored in R93, R94, R95, interpreted as FMA (fused multiply-add) of R93 × R94 + R95 when used by extended accuracy functions in menu XFCNS ; split screen may show "No error" (Info : R93, mapped to R93, R94, R95)
Recall triple V	Command		3RCLV ₉₀	3RCLV ₉₀	Electrical engineering	Push R90, R91, R92 to X, Y, Z ; used in menu ELEC and as dedicated registers for Virtual compound data types, as a "Triplet" stored in R90, R91, R92, interpreted as FMA (fused multiply-add) of R90 × R91 + R92 when used by extended accuracy functions in menu XFCNS ; split screen may show "No error" (Info : R90, mapped to R90, R91, R92)
Recall triple Z	Command		3RCLZ ₉₆	3RCLZ ₉₆	Electrical engineering	Push R96, R97, R98 to X, Y, Z ; used in menu ELEC and as dedicated registers for Virtual compound data types, as a "Triplet" stored in R96, R97, R98, interpreted as FMA (fused multiply-add) of R96 × R97 + R98 when used by extended accuracy functions in menu XFCNS ; split screen may show "No error" (Info : R96, mapped to R96, R97, R98)
Recall vector element	Command		RCLVEL	RCLVEL	Matrix operations	Recall element n (TAM) of vector or matrix in X (Shortcut : [RCL] - ...VEL _{nn} ; TAM : RCLVEL ____ Tam menu)
Recall vector element	Command (TAM)		...VEL _{nn}	RCLVEL	Trailing input	Presented in menu TamRcl to recall element n (TAM) of vector or matrix in X (Shortcut : [RCL] - ...VEL _{nn} ; TAM : RCLVEL ____ Tam menu)
Recall vector element	Command (old)		>RCLVEL<		Matrix operations	Old version of the command RCLVEL (Info : May be found in older user programs, use RCLVEL on [MATX.1]gF4 instead)
Recall vector element 1	Command		RCLVEL ₁	RCLVEL ₁	Matrix operations	Recall element 1 of vector or matrix in X
Recall vector element 1	Command (TAM)		...VEL ₁	RCLVEL ₁	Trailing input	Presented in menu TamRcl to recall element 1 of vector or matrix in X
Recall vector element 2	Command		RCLVEL ₂	RCLVEL ₂	Matrix operations	Recall element 2 of vector or matrix in X
Recall vector element 2	Command (TAM)		...VEL ₂	RCLVEL ₂	Trailing input	Presented in menu TamRcl to recall element 2 of vector or matrix in X
Recall vector element 3	Command		RCLVEL ₃	RCLVEL ₃	Matrix operations	Recall element 3 of vector or matrix in X
Recall vector element 3	Command (TAM)		...VEL ₃	RCLVEL ₃	Trailing input	Presented in menu TamRcl to recall element 3 of vector or matrix in X
Recall X, Y	Command		2RCL	2RCL	Stack	Recall X, Y from two consecutive registers, specify first register using TAM
Recall X, Y, Z	Command		3RCL	3RCL	Stack	Recall X, Y, Z from three consecutive registers, specify first register using TAM (TAM : 3RCL __ Tam menu)
Reciprocal	Function (monadic)		1/x	1/x	Mathematics	Reciprocal (1/X) (Info : When X is a matrix 1/x inverts it ([M] ⁻¹) ; Keyboard [1/x])
Rectangular notation	Setting (pgm)	ON	RECT	RECT @	Complex and coordinates	Switch on rectangular notation (Info : SBI L ; @ is shown if flag SBcpX is SET)
Reduced Planck constant	Constant		ħ		Constants	Constant # 20 ħ red.planck = +1.054571817646156391262428003302281 × 10 ⁻³⁴ (Unit : Js)
Register A	EasyAccess (TAM)		A		Trailing input	Easy access to Register A (104) : Stack level 5 (Shortcut : STO/RCL {A} ; TI : A:)
Register A	Register (lettered)		A		Lettered registers	Register A (104) : Stack level 5 (Info : Reached using stack or from STO/RCL [REG.1]fF3 or STO/RCL {A})
Register B	EasyAccess (TAM)		B		Trailing input	Easy access to Register B (105) : Stack level 6 (Shortcut : STO/RCL {B} ; TI : B:)
Register B	Register (lettered)		B		Lettered registers	Register B (105) : Stack level 6 (Info : Reached using stack or from STO/RCL [REG.1]fF4 or STO/RCL {B})
Register browser	Browser		REGS	REGS	Status	Browse all registers (Shortcut : [.] : Switch register/variable view,[R/S] : Switch contents/storage view,[RCL] : Recall bottom item,[▲], [▼], ABCDEGHIJKLMNO, 00..99 : Navigate, [EXIT] : Exit Register browser ; Ref : https://47calc.com/doc/C47/Reference/C47_Registers.pdf)
Register C	EasyAccess (TAM)		C		Trailing input	Easy access to Register C (106) : Stack level 7 (Shortcut : STO/RCL {C} ; TI : C:)

FullName	Type	Default	Label	Catalog	Category	Extended description
Register C	Register (lettered)		C		Lettered registers	Register C (106) : Stack level 7 (Info : Reached using stack or from STO/RCL [REG.1] fF5 or STO/RCL {C})
Register D	EasyAccess (TAM)		D		Trailing input	Easy access to Register D (107) : Stack level 8 (Shortcut : STO/RCL {D} ; TI : D:)
Register D	Register (lettered)		D		Lettered registers	Register D (107) : Stack level 8 (Info : Reached using stack or from STO/RCL [REG.1] fF6 or STO/RCL {D})
Register E	EasyAccess (TAM)		E		Trailing input	Easy access to Register E (217) : General purpose register E (Shortcut : STO/RCL {E} ; TI : E:)
Register E	Register (lettered)		E		Lettered registers	Register E (217) : General purpose register E (Info : Reached from STO/RCL [REG.2] F1 or STO/RCL {E})
Register F	EasyAccess (TAM)		F		Trailing input	Easy access to Register F (218) : General purpose register F (TI : F:)
Register F	Register (lettered)		F		Lettered registers	Register F (218) : General purpose register F (Info : Reached from STO/RCL [REG.2] F2)
Register G	EasyAccess (TAM)		G		Trailing input	Easy access to Register G (219) : General purpose register G ; also used to store third to last long integer prime factor for FACTORS (Shortcut : STO/RCL {G} ; TI : G:)
Register G	Register (lettered)		G		Lettered registers	Register G (219) : General purpose register G ; also used to store third to last long integer prime factor for FACTORS (Info : Reached from STO/RCL [REG.2] F3 or STO/RCL {G})
Register H	EasyAccess (TAM)		H		Trailing input	Easy access to Register H (220) : General purpose register H ; also used to store second to last long integer prime factor for FACTORS (Shortcut : STO/RCL {H} ; TI : H:)
Register H	Register (lettered)		H		Lettered registers	Register H (220) : General purpose register H ; also used to store second to last long integer prime factor for FACTORS (Info : Reached from STO/RCL [REG.2] F4 or STO/RCL {H})
Register I	EasyAccess (TAM)		I		Trailing input	Easy access to Register I (109) : General purpose register I ; also used to store current row of indexed matrix (Shortcut : STO/RCL {I} ; TI : I: or M[I, Jc]=<name> [<row> <col>] (if indexed matrix exists))
Register I	Register (lettered)		I		Lettered registers	Register I (109) : General purpose register I ; also used to store current row of indexed matrix (Info : Reached from STO/RCL [REG.1] gF1 or STO/RCL {i})
Register J	EasyAccess (TAM)		J		Trailing input	Easy access to Register J (110) : General purpose register J ; also used to store current column of indexed matrix (Shortcut : STO/RCL {J} ; TI : J: or M[I, Jc]=<name> [<row> <col>] (if indexed matrix exists))
Register J	Register (lettered)		J		Lettered registers	Register J (110) : General purpose register J ; also used to store current column of indexed matrix (Info : Reached from STO/RCL [REG.1] gF2 or STO/RCL {J})
Register K	EasyAccess (TAM)		K		Trailing input	Easy access to Register K (111) : General purpose register K ; also used in VarMNU to store variable name when MVAR-defined button (<var...>) is pressed without NIM input ; also used to store last long integer prime factor for FACTORS or the remaining number to be factorised ; also used as the default alpha register for commands compatible with the HP-42S/DM42(n) calculator (Shortcut : STO/RCL {K} ; TI : K:)
Register K	Register (lettered)		K		Lettered registers	Register K (111) : General purpose register K ; also used in VarMNU to store variable name when MVAR-defined button (<var...>) is pressed without NIM input ; also used to store last long integer prime factor for FACTORS or the remaining number to be factorised ; also used as the default alpha register for commands compatible with the HP-42S/DM42(n) calculator (Info : Reached from STO/RCL [REG.1] fF1 or STO/RCL {K})
Register L	EasyAccess (TAM)		L		Trailing input	Easy access to Register L (108) : Last X (Shortcut : STO/RCL {L} ; TI : L:)
Register L	Register (lettered)		L		Lettered registers	Register L (108) : Last X (Info : Reached from STO/RCL [REG.1] fF2 or STO/RCL {L})
Register M	EasyAccess (TAM)		M		Trailing input	Easy access to Register M (211) : General purpose register M ; also used to store distribution parameter : mean, median, location, degree of freedom 1, centre, lower limit (Shortcut : STO/RCL {M} ; TI : M:)
Register M	Register (lettered)		M		Lettered registers	Register M (211) : General purpose register M ; also used to store distribution parameter : mean, median, location, degree of freedom 1, centre, lower limit (Info : Reached from STO/RCL [REG.1] F1 or STO/RCL {M})

FullName	Type	Default	Label	Catalog	Category	Extended description
Register N	EasyAccess (TAM)		N		Trailing input	Easy access to Register N (212) : General purpose register N ; also used to store distribution parameter : degree of freedom 2, quantity, upper limit (Shortcut : STO/RCL {N} ; TI : N:)
Register N	Register (lettered)		N		Lettered registers	Register N (212) : General purpose register N ; also used to store distribution parameter : degree of freedom 2, quantity, upper limit (Info : Reached from STO/RCL [REG.1]F2 or STO/RCL {N})
Register O	EasyAccess (TAM)		O		Trailing input	Easy access to Register O (221) : General purpose register O (Shortcut : STO/RCL {O} ; TI : O:)
Register O	Register (lettered)		O		Lettered registers	Register O (221) : General purpose register O (Info : Reached from STO/RCL [REG.2]F5 or STO/RCL {O})
Register P	EasyAccess (TAM)		P		Trailing input	Easy access to Register P (213) : General purpose register P ; also used to store distribution parameter : probability (TI : P:)
Register P	Register (lettered)		P		Lettered registers	Register P (213) : General purpose register P ; also used to store distribution parameter : probability (Info : Reached from STO/RCL [REG.1]F3)
Register Q	EasyAccess (TAM)		Q		Trailing input	Easy access to Register Q (214) : General purpose register Q ; also used to store distribution parameter : shape, 3rd integer (TI : Q:)
Register Q	Register (lettered)		Q		Lettered registers	Register Q (214) : General purpose register Q ; also used to store distribution parameter : shape, 3rd integer (Info : Reached from STO/RCL [REG.1]F4)
Register R	EasyAccess (TAM)		R		Trailing input	Easy access to Register R (215) : General purpose register R ; also used to store distribution parameter : rate (TI : R:)
Register R	Register (lettered)		R		Lettered registers	Register R (215) : General purpose register R ; also used to store distribution parameter : rate (Info : Reached from STO/RCL [REG.1]F5)
Register S	EasyAccess (TAM)		S		Trailing input	Easy access to Register S (216) : General purpose register S ; also used to store distribution parameter : scale, spread (TI : S:)
Register S	Register (lettered)		S		Lettered registers	Register S (216) : General purpose register S ; also used to store distribution parameter : scale, spread (Info : Reached from STO/RCL [REG.1]F6)
Register T	EasyAccess (TAM)		T		Trailing input	Easy access to Register T (103) : Stack level 4 (TI : T:)
Register T	Register (lettered)		T		Lettered registers	Register T (103) : Stack level 4 (Info : Reached using stack or from STO/RCL [Tam.1]F6)
Register U	EasyAccess (TAM)		U		Trailing input	Easy access to Register U (222) : General purpose register U (TI : U:)
Register U	Register (lettered)		U		Lettered registers	Register U (222) : General purpose register U (Info : Reached from STO/RCL [REG.2]F6)
Register V	EasyAccess (TAM)		V		Trailing input	Easy access to Register V (223) : General purpose register V (TI : V:)
Register V	Register (lettered)		V		Lettered registers	Register V (223) : General purpose register V (Info : Reached from STO/RCL [REG.2]fF1)
Register W	EasyAccess (TAM)		W		Trailing input	Easy access to Register W (224) : General purpose register W (TI : W:)
Register W	Register (lettered)		W		Lettered registers	Register W (224) : General purpose register W (Info : Reached from STO/RCL [REG.2]fF2)
Register X	EasyAccess (TAM)		X		Trailing input	Easy access to Register X (100) : Stack level 1 (TI : X:)
Register X	Register (lettered)		X		Lettered registers	Register X (100) : Stack level 1 (Info : Reached using stack or from STO/RCL [Tam.1]F3)
Register Y	EasyAccess (TAM)		Y		Trailing input	Easy access to Register Y (101) : Stack level 2 (TI : Y:)
Register Y	Register (lettered)		Y		Lettered registers	Register Y (101) : Stack level 2 (Info : Reached using stack or from STO/RCL [Tam.1]F4)
Register Z	EasyAccess (TAM)		Z		Trailing input	Easy access to Register Z (102) : Stack level 3 (TI : Z:)
Register Z	Register (lettered)		Z		Lettered registers	Register Z (102) : Stack level 3 (Info : Reached using stack or from STO/RCL [Tam.1]F5)
Regression	MENU		[REGR]	REGR	Plotting and curve fitting	Regression functions Docs: https://47calc.com/doc/C47/Menus/C47_Menu_REGR_page_1.pdf
Regularised (incomplete) Beta function	Function (triadic)		I _{xyz}	I _{xyz}	Mathematics	Regularised (incomplete) Beta function -- see https://en.wikipedia.org/wiki/Beta_function
Remainder	Function (dyadic)		RMD	RMD	Integers	Remainder of division of Y by X
Remark	Command (PEM)		REM	REM	Programming	Comment line in program (maximum 160 characters) (Info : REM '_' ALPHA (ALPHA) menu)
ReMp261	User Program		ReMp261		Test programs	ReMp261 test program, available to load from PROGRAMS/ALLPGMS/ReMp261.p47, using READP (after unzipping resources/testPgms.zip)

FullName	Type	Default	Label	Catalog	Category	Extended description
Reset	Command		RESET	RESET	System	Reset the calculator ; fill registers R10-R38 with special values ; this is the only way to do a clean restart if an autoloader file is present (YESN0 : Reset? ; Info : Clean startup, no autoloading of SAVFILES/C47auto.sav or SAVFILES/C47.sav ; does not reset the keyboard layout chosen in menu KEYS)
Reset fitting	Command		ResetF	ResetF	Plotting and curve fitting	Reset <BestF> to default (1) (TI : L.R. selected to 001)
Reset plot	Command (PEM)		PLTRST	PLTRST	Plotting	Reset all plot options and redraw graph (Info : Resets options for lines, boxes, crosses, plusses and scaling ; PLTRST also resets $\downarrow Y$ and $\uparrow Y$ to zero)
Reset stopwatch	Command		RESET		Stopwatch	Reset the stopwatch (Shortcut : [←] (STOPW active))
Resets	MENU		[RESETS]	RESETS	Cleanup	Reset user menus to defaults ; delete user keyboard assignments Docs: https://47calc.com/doc/C47/Menus/C47_Menu_RESETS_page_1.pdf
Retrieve LR-param a_0	Command		LR:a0	LR:a0	Plotting and curve fitting	Retrieve linear regression parameter a_0 and show formula and parameter name (TI : $y = \langle \text{formula} \rangle : a_0 =$)
Retrieve LR-param a_1	Command		LR:a1	LR:a1	Plotting and curve fitting	Retrieve linear regression parameter a_1 and show formula and parameter name (TI : $y = \langle \text{formula} \rangle : a_1 =$)
Retrieve LR-param a_2	Command		LR:a2	LR:a2	Plotting and curve fitting	Retrieve linear regression parameter a_2 and show formula and parameter name (TI : $y = \langle \text{formula} \rangle : a_2 =$)
Return	Command (PEM)		RTN	RTN	Programming	Return from subroutine to calling program
Return and skip	Command (PEM)		RTN.SKIP	RTN.SKIP	Programming	Return from subroutine to calling program and skip the instruction following the calling XEQ (intended use is to allow a subroutine to function as a built in test function, which if true, returns using RTN and using RTN.SKIP otherwise) (Ref : https://47calc.com/doc/C47/Reference/C47_Skipping_program_steps.pdf)
Return from HP-35 to C47 profile	Setting (group)	ON	47		Developer	Return from HP-35 tribute to C47 profile (Info : The configuration is restored from register 35 where it was stored by setting the HP-35 tribute profile)
RHO	Character		P		Characters	Character P (Fontcode : 03A1 ₁₆ ; Info : press [▼] for p at [α...ω.2]F1)
rho	Character		p		Characters	Character p (Fontcode : 03C1 ₁₆ ; Info : press [▲] for P at [A...Ω.2]F1)
Ribbons	MENU		[RIBBONS]	RIBBONS	Customisation	Selection of ribbons for MyM (MyMenu) (Info : Ribbons are predefined sets of buttons to assign to the primary (unshifted) row of MyM (MyMenu)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_RIBBONS_page_1.pdf
Riemann's Zeta for real arguments	Function (monadic)		ζ(x)	ζ(x)	Mathematics	Riemann's Zeta for real arguments -- see http://mathworld.wolfram.com/RiemannZetaFunction.html
Right angle	Character		⊥		Characters	Character ⊥ (Fontcode : 221F ₁₆)
Right arrow	Character		→		Characters	Character → (Fontcode : 21E2 ₁₆)
Right bit mask	Function (monadic)		MASKR	MASKR	Bits and bytes	Set right n bits to use as mask (TAM : MASKR ___ TamNonReg menu)
Right block arrow	Character		➔		Characters	Character ➔ (Fontcode : 2B62 ₁₆)
Right curly bracket	Character		}		Characters	Character } (Fontcode : 007D ₁₆)
Right double quotation mark	Character		”		Characters	Character ” (Fontcode : 201D ₁₆)
Right French quotation mark	Character		»		Characters	Character » (Fontcode : 00BB ₁₆)
Right justify	Function (monadic)		RJ	RJ	Bits and bytes	Right justify (within word size) ; returns shift in X and result in Y
Right parenthesis	Symbol		)		Mathematics and characters	Close (right) parenthesis (Fontcode : 0029 ₁₆)
Right single quotation mark	Character		'		Characters	Character ' (Fontcode : 2019 ₁₆)
Right square bracket	Character		]		Characters	Character] (Fontcode : 005D ₁₆)
right tack	Character		⌞		Characters	Character ⌞ (Fontcode : 22A2 ₁₆)
Ring	Character		◦		Characters	Character ◦ (Fontcode : 2218 ₁₆)
Roll down	Command		R↓	R↓	Stack	Roll down stack ; Keyboard [R↓]
Roll up	Command		R↑	R↑	Stack	Roll up stack
Root fit	Setting	OFF	RootF	RootF □	Plotting and curve fitting	Set <BestF> to include Root curve fitting : $y = a_0 a_1^{(1/x)}$; deselects OrthoF (Info : Adds 16 to <BestF> ; TI : L.R. selected to <BestF>.)
Rotate Alpha register	Command (42)		42AROT	42AROT	Compatibility	Rotate Alpha register by the number of characters specified in X (positive : shift left, negative : shift right) ; this is a HP-42S/DM42(n) calculator compatible command (Info : For empty text string, 42AROT acts as NOP ; Error 64 -- No string in alpha register -- may be raised)
Rotate Left	Function (monadic)		RLn	RLn	Bits and bytes	Rotate Left with number of bits (trailing input) (TAM : RLn ___ TamNonReg menu)
Rotate Left (1)	Function (monadic)		RL	RL	Bits and bytes	Shortcut to Rotate Left (1 bit)
Rotate Left through Carry	Function (monadic)		RLCn	RLCn	Bits and bytes	Rotate Left through Carry with number of bits (trailing input) (TAM : RLCn ___ TamNonReg menu)
Rotate Left through Carry (1)	Function (monadic)		RLC	RLC	Bits and bytes	Shortcut to Rotate Left through Carry (1 bit)

FullName	Type	Default	Label	Catalog	Category	Extended description
Rotate right	Function (monadic)		RRn	RRn	Bits and bytes	Rotate right with number of bits (trailing input) (TAM : RRn __ TamNonReg menu)
Rotate right (1)	Function (monadic)		RR	RR	Bits and bytes	Shortcut to Rotate right (1 bit)
Rotate Right through Carry	Function (monadic)		RRCn	RRCn	Bits and bytes	Rotate Right through Carry with number of bits (trailing input) (TAM : RRCn __ TamNonReg menu)
Rotate Right through Carry (1)	Function (monadic)		RRC	RRC	Bits and bytes	Shortcut to Rotate Right through Carry (1 bit)
Round	Function (monadic)		ROUND	ROUND	Reals	Round number to current display format (returns Real number)
Round to decimal places	Function (monadic)		RDP	RDP	Reals	Round real number to number of decimal places, subject to rounding mode (RMODE) (TAM : RDP __ TamNonReg menu ; Range is [0, 34])
Round to integer	Function (monadic)		ROUNDI	ROUNDI	Reals	Round real number to nearest long integer (max 1000 digits)
Round to significant digits	Function (monadic)		RSD	RSD	Reals	Round real number to number of significant digits, subject to rounding mode (RMODE) (TAM : RSD __ TamNonReg menu)
Row or Maximum norm	Function (monadic)		RNORM	RNORM	Matrix operations	Maximum row sum of absolute element values of a matrix in X : $\ x\ _{\infty} = \max_i \sum_j a_{ij} $ (Info : If RNORM is selected from menu [TamNorm.1] fF3, it enters $\ x\ _p$ with parameter ω : Maximum row sum of absolute element values of a matrix in X : $\ x\ _{\omega} = \max_i \sum_j a_{ij} $)
Row sum	Command		RSUM	RSUM	Matrix operations	Row sum of vector or matrix in X : $RSUM = \sum_j a_{ij}$
RPM to deg/s	Function (monadic, linked)		RPM→deg/s		Angular/Speed conversions	Convert rotation per minute to degree per second (TI : deg/s:)
RPM to rad/s	Function (monadic, linked)		RPM→rad/s		Angular/Speed conversions	Convert rotation per minute to radian per second (TI : rad/s:)
Run/Stop program	Command		R/S		Programming	Run/Stop program (Info : In Program Entry Mode, R/S enters STOP) ; Keyboard [R/S]
Rydberg constant	Constant		R _∞		Constants	Constant # 43 R _∞ c.rydberg = +1.097373156815 × 10 ⁷ (Unit : /mol)
S	Character		S		Characters	Character S (Fontcode : 0053 ₁₆) ; Keyboard alpha f [:]
s	Character		s		Characters	Character s (Fontcode : 0073 ₁₆) ; Keyboard alpha f [:]
S accute	Character		Ŝ		Characters	Character Ŝ (Fontcode : 015A ₁₆ ; Info : press [▼] for ŝ at [aintl.3] gF3)
s accute	Character		ŝ		Characters	Character ŝ (Fontcode : 015B ₁₆ ; Info : press [▲] for Ŝ at [aintl.3] gF3)
S caron	Character		Š		Characters	Character Š (Fontcode : 0160 ₁₆ ; Info : press [▼] for š at [aintl.3] gF5)
s caron	Character		š		Characters	Character š (Fontcode : 0161 ₁₆ ; Info : press [▲] for Š at [aintl.3] gF5)
S cedilla	Character		Ș		Characters	Character Ș (Fontcode : 015E ₁₆ ; Info : press [▼] for ș at [aintl.3] gF4)
s cedilla	Character		ș		Characters	Character ș (Fontcode : 015F ₁₆ ; Info : press [▲] for Ș at [aintl.3] gF4)
s to ftn	Function (monadic, linked)		s→ftn		Time conversions	Convert second to fortnight (TI : ftn:)
s to year	Function (monadic, linked)		s→year		Time conversions	Convert second to year (TI : year:)
S _{xy}	Command		S _{xy}	S _{xy}	Plotting and curve fitting	Sample covariance
Safe reset f/g timers	Command		SRESET	SRESET	User interface	Safe reset, then toggle ON/OFF the timing related user interface options: fg.FUL ▢, g.2Tp ▢, SH.4s ▢, HOME ³ ▢
Sales price having margin	Function (dyadic)		%+MG	%+MG	Financial	Find sales price having margin of X percent over cost Y : %MG = Y / (1 - X/100) -- see Formula_PCPMG.png : https://47calc.com/doc/Images/Formula_PCPMG.png (Info : Margin is percentage of sales price)
SAMPI	Character		Ɔ		Characters	Character Ɔ (Fontcode : 03E0 ₁₆ ; Info : press [▼] for ɔ at [α...ω.2] fF4)
sampi	Character		ɔ		Characters	Character ɔ (Fontcode : 03E1 ₁₆ ; Info : press [▲] for Ɔ at [A...Ω.2] fF4)
Sample standard deviation	Command		s	s	Summary statistics	Sample standard deviation -- see Formula_STDDEVWEIGHTED.png : https://47calc.com/doc/Images/Formula_STDDEVWEIGHTED.png (TI : s _x = ; s _y =)
Save autoload file	Command (nonpgm, HW)		SAVEAUT	SAVEAUT	Input-Output	Save autoload file to file SAVFILES/C47auto.sav in FAT ; hardware only (TI : Saved ; Directory : SAVFILES/ ; Info : Error 126 -- Not available on the simulator -- is raised when this command is performed on the simulator)
Save full backup	Command (nonpgm)		SAVE	SAVE	Input-Output	Save full backup to file SAVFILES/C47.sav in FAT (TI : Saved ; Directory : SAVFILES/)
Save full state file	Command (nonpgm)		SAVEST	SAVEST	Input-Output	Save backup file (.s47) in FAT for LOADST ; the state file contains the complete state of the calculator: all memory content (registers, variables, programs, equations), all user assignments (key assignments, user menus) and all settings (TI : Saving state file ... ; Saved ; DMCP File save dialog ("Save Calculator State" -- STATE/))
Scatter plot	MENU (item)		[SCATR]	SCATR	Measurement	Scatter plot of measurements (programmable) (Info : CENTRL (re)starts menu SCATR ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_SCATR_page_1.pdf
Scattering factor for a lognormal population	Command		ε _p	ε _p	Summary statistics	Scattering factor for a lognormal population -- see Formula_SCATTFACtP.png : https://47calc.com/doc/Images/Formula_SCATTFACtP.png (TI : ε _{px} = ; ε _{py} =)

FullName	Type	Default	Label	Catalog	Category	Extended description
Scattering factor for a lognormal sample	Command		ε	ε	Summary statistics	Scattering factor for a lognormal sample -- see Formula_SCATTFACt.png : https://47calc.com/doc/Images/Formula_SCATTFACt.png (TI : $\varepsilon_x =$; $\varepsilon_y =$)
Scattering factor of the geometric mean	Command		ε_m	ε_m	Summary statistics	Scattering factor of the geometric mean -- see Formula_SCATTFACt.png : https://47calc.com/doc/Images/Formula_SCATTFACt.png (TI : $\varepsilon_{mx} =$; $\varepsilon_{my} =$)
Scientific display large Real numbers	Setting (pgm)	ON	SCIOVR	SCIOVR 0	Display	Switch on displaying large Real numbers in scientific notation
SCientific notation	Setting (pgm)	OFF	SCI	SCI 0	Display	Set numeric display mode to scientific notation with nn decimals = nn+1 digits (NDEC = nn = 0-19 ; DF = 2) (TAM : SCI __ TamNonReg menu ; Info : this setting applies to Real numbers and Complex numbers)
Screenshot	Command		SNAP	SNAP	Input-Output	Save screenshot to backup file (.bmp) and save contents of stack or alpha buffer as backup file (.REGS.TSV) in FAT ; plays clicking sound (Shortcut : [f/g] + [E] (DMCP-shortcut for screenshot bitmap only) ; Info : screenshot is saved in file SCREENS/<YYYYMMDD-HHMMSS00>.bmp ; SNAP also appends data to file DATA/<YYYYMMDD-HHMMSS00>.REGS.TSV ; new datafile after timeout of 2 minutes)
Second derivative (RPN)	Command (old)		>f''(x)<		RPN Calculus and plotting	Old version of the command to numerically calculate the second derivative at X using RPN program (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use f'' on [ADV.1] gF6 instead)
Second derivative (RPN)	Command (submnu)		f'	f'	RPN Calculus and plotting	Numerically calculate second derivative using RPN program, at value of starred MVAR variable and using step size of δ_d , as specified using the buttons in the (MVAR (delta)) menu presented (TAM : f' __ TamLbIOnly menu ; TI : $\delta =$; f' $\approx$; Info : if no step size is entered, an automatic step size is determined by iteration in 16 steps, starting with 1/10 ; the step size will always be displayed as "d")
Second derivative [EQN]	Command		Calc f''	Calc f''	Equations	Numerically calculate second derivative for (starred) variable (TI : f'' =)
Second derivative menu [EQN]	MENU		[f'']	f''	Equations	Numerically calculate second derivative using current expression, at value of starred variable and using step size of δ_d , as specified using the buttons in this menu (TI : $\delta =$; f'' $\approx$; Info : if no step size is entered, an automatic step size is determined by iteration in 16 steps, starting with 1/10 ; the step size will always be displayed as "d") Docs: https://47calc.com/doc/C47/Menus/C47_Menu_f-double_page_1.pdf
Seconds	Function (monadic)		SECOND	SECOND	Time functions	Seconds (of time in X)
Section	Character		§		Characters	Character § (Fontcode : 00A716)
Section properties conversions	MENU		[SecPrp:]	SecPrp:	Miscellaneous conversions	Convert between units of section properties ; typical properties given in tables of steel/ALU sections (Info : Flag CONV _{HP} may be SET for <to> <f> <to> unit conversion buttons ; CLEAR for <from> <f> <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_SecPrp_page_1.pdf
Seed	Command		SEED	SEED	Probability	Set seed for the pseudo random number generators RAN# and RANI# (Info : If X = 0, then SEED will use a combination of available memory and current time to create a random-like new seed ; for any other (numeric) input the resulting pseudo random sequence will be repeatable)
Select FP separator	MENU (item, nonpgm)		[FPART.]	FPART	Display	Select fractional part separator ; button label showing current separator (.) ; symbol ø for no separator (Info : CAT.MENUS FPART) Docs: https://47calc.com/doc/C47/Menus/xxx1.pdf
Select FP separator	MENU		[FPART]	FPART	Display	Select fractional part separator Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FPART_page_1.pdf
Select IP separator	MENU (item, nonpgm)		[IPART.]	IPART	Display	Select integer part separator ; button label showing current separator (.) ; symbol ø for no separator (Info : CAT.MENUS IPART) Docs: https://47calc.com/doc/C47/Menus/xxx1.pdf
Select IP separator	MENU		[IPART]	IPART	Display	Select integer part separator Docs: https://47calc.com/doc/C47/Menus/C47_Menu_IPART_page_1.pdf
Select R47 layouts	Setting	OFF	R47		Customisation	Select R47 layouts (fg, f ^g o, f ^g g, o f ^g) (Info : Initial layout selected is fg (R47v0))
Select radix	MENU (item, nonpgm)		[RADIX.]	RADIX	Display	Select radix ; button label showing current radix (.) (Info : CAT.MENUS RADIX) Docs: https://47calc.com/doc/C47/Menus/xxx1.pdf
Select radix	MENU		[RADIX]	RADIX	Display	Select radix Docs: https://47calc.com/doc/C47/Menus/C47_Menu_RADIX_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Semi-major axis of the Earth	Constant		$S_{a\oplus}$		Constants	Constant # 46 $S_{a\oplus}$ majax.earth = $+6.378137 \times 10^6$ (Unit : m)
Semi-minor axis of the Earth	Constant		$S_{b\oplus}$		Constants	Constant # 47 $S_{b\oplus}$ minax.earth = $+6.3567523142 \times 10^6$ (Unit : m)
Semicolon	Character		;		Characters	Character ; (Shortcut : alpha f[0] ; Info : Fontcode : 003B ₁₆)
Set ADM to D.MS	Setting (pgm)	OFF	D.MS	D.MS ○	Angle tagging or conversion	Set Angular Display Mode to sexagesimal degrees mode (ADM = 1) (Info : SBI 4 is shown if flag SBang and SBadm is SET)
Set ADM to DEG	Setting (pgm)	ON	DEG	DEG ○	Angle tagging or conversion	Set Angular Display Mode to degrees mode (ADM = 0) (Info : SBI 0 is shown if flag SBadm is SET ; SBI 4 is shown if flag SBang and SBadm is SET)
Set ADM to GRAD	Setting (pgm)	OFF	GRAD	GRAD ○	Angle tagging or conversion	Set Angular Display Mode to gradians mode (ADM = 4) (Info : SBI 4 is shown if flag SBang and SBadm is SET)
Set ADM to MULπ	Setting (pgm)	OFF	MULπ	MULπ ○	Angle tagging or conversion	Set Angular Display Mode to multiple of pi radians mode (ADM = 3) (Info : SBI 4 is shown if flag SBang and SBadm is SET)
Set ADM to RAD	Setting (pgm)	OFF	RAD	RAD ○	Angle tagging or conversion	Set Angular Display Mode to radians mode (ADM = 2) (Info : SBI 4 is shown if flag SBang and SBadm is SET)
Set all (models)	Command		ALLF	ALLF	Plotting and curve fitting	Set <BestF> to include all curve fitting models (511) ; deselects OrthoF (TI : L.R. selected to 511)
Set angular display mode	Command	0	ADM	ADM ₀	Angle tagging or conversion	Set angular display mode to X ; also set interactively from menu MODE formats or from catalog (DEG ; D.MS ; RAD ; MULπ ; GRAD) (Info : DEG : 0 ; D.MS : 1 ; RAD : 2 ; MULπ : 3 ; GRAD : 4)
Set Best Fit	Setting	1	BestF	BestF ₁	Plotting and curve fitting	Select curve fit model(s) by setting parameter value directly (TAM : BestF ___ TamNonReg menu)
Set Best Fit	Setting (old)	1	>BestF<		Plotting and curve fitting	Old version of the setting BestF that could not use indirect addressing (Info : May be found in older user programs, use BestF on [MODEL.1] gF3 instead)
Set bit	Function (monadic)		SB	SB	Number bases	Set bit n (TAM : SB ___ TamNonReg menu)
Set current matrix index	Command		STOIJ	STOIJ	Matrix operations	Set current matrix index (row I and column J) (Shortcut : [STO] - ...IJ ; TI : M<name> :I _r = ; M<name> :J _c =)
Set current matrix index	Command (TAM)		...IJ	STOIJ	Trailing input	Presented in menu TamSto to set current matrix index (row I and column J) (Shortcut : [STO] - ...IJ ; TI : M<name> :I _r = ; M<name> :J _c =)
Set D.MS tag or convert to D.MS	Function (monadic)		⇒D.MS	⇒D.MS	Angle tagging or conversion	If untagged, set tag to D.MS (sexagesimal degrees) ; if tagged, convert X to D.MS ; does not change Angular Display Mode (Tag : °)"
Set date	Setting (pgm, HW)		SETDAT	SETDAT	Time functions	Set date ; hardware only (DMCP setting) (Info : Error 126 -- Not available on the simulator -- is raised when this setting is performed on the simulator)
Set DEG tag or convert to DEG	Function (monadic)		⇒DEG	⇒DEG	Angle tagging or conversion	If untagged, set tag to DEG (degrees) ; if tagged, convert X to DEG ; does not change Angular Display Mode (Tag : °)
Set DMX to maximum	Command	64	DMXmax	DMXmax	Trailing input	Set DMX to maximum value (32500, stored as 0) (Info : SBI /max is shown if flag SBfrac is SET)
Set flag	Command		SF	SF	Programming	Set flag (TAM : SF ___ TamFlag menu)
Set GRAD tag or convert to GRAD	Function (monadic)		⇒GRAD	⇒GRAD	Angle tagging or conversion	If untagged, set tag to GRAD (gradians) ; if tagged, convert X to GRAD ; does not change Angular Display Mode (Tag : °)
Set hide parameter	Setting (pgm)	0	HIDE	HIDE ₀	Display	Set parameter to hide small Real numbers or parts ; display ≈0. for numbers with absolute values < 10 ⁻ⁿ , where n in [12, 99] ; useful e.g. in matrices ; reset by HIDE 0 ; when menu XFCNS is open, setting HIDE is ignored (TAM : HIDE _ TamNonReg menu ; Info : numbers smaller than the range specified by RNG are also displayed as ≈0.)
Set hide parameter	Setting (pgm, old)	0	>HIDE<		Display	Old version of the setting HIDE that used stack input (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use HIDE on [DISP.2] gF6 instead)
Set HP-35 tribute profile	Setting (group)	OFF	HP35		Developer	Set HP-35 tribute profile (Info : The current configuration is stored in register 35 when setting the HP-35 tribute profile)
Set integer sign mode	Command	2	ISM	ISM ₂	Integers	Set integer sign mode to X ; also set interactively from menu BITSET (1COMPL ; 2COMPL ; SIGNMT ; UNSIGN) (Info : 1COMPL: 1 ; 2COMPL: 2 ; SIGNMT: -1 ; UNSIGN: 0)
Set JM profile	Setting (group)	OFF	JM		Developer	Set JM profile (Info : JM is one of the C47/R47 developers)
Set Julian-Gregorian transition	Function (monadic)	1752-09-14	J/G	J/G	Time functions	Set the day that Julian date changes over to Gregorian date (using date in X) (Info : Input real number according to function x⇒D)
Set max denominator for fractions	Command	64	DMXX	DMXX ₆₄	Fractions	Set max denominator for fractions to value in X ; maximum value of 32500 is set by value 0 in X, stored as 0 and displayed as DMXX ₀ ; also set interactively from menu DISP (DMX TAM variant) (Info : is [2, 9999] or 0, indicating DMXmax = 32500 ; SBI is shown if flag SBfrac is SET)

FullName	Type	Default	Label	Catalog	Category	Extended description
Set max denominator for fractions [Old]	Setting (pgm, old)	64	>DMX<		Fractions	Old version of the setting DMX that could not use indirect addressing (Info : May be found in older user programs ; use DMX on [DISP.1]fF4 instead or DMXX on [INFO.3]fF5)
Set max denominator for fractions [TAM]	Setting (pgm)	64	DMX	DMX ₆₄	Fractions	Set max denominator for fractions [TAM variant] ; maximum value of 32500 is set by button DMXmax on [TamNonRegMax.1]F2, stored as 0 and displayed as DMX _{max} (TAM : DMX ____ TamNonRegMax menu ; range is [2, 9999] or 0, indicating DMXmax = 32500 ; SBI is shown if flag SBfrac is SET)
Set max denominator for fractions [TAM]	Setting (pgm, older)	64	>DMX<		Fractions	Older version of the setting DMX that used stack input (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use DMX on [DISP.1]fF4 instead or DMXX on [INFO.3]fF5)
Set MUL π tag or convert to MUL π	Function (monadic)		$\rightarrow$ MUL π	$\rightarrow$ MUL π	Angle tagging or conversion	If untagged, set tag to MUL π (multiple of pi radians) ; if tagged, convert X to MUL π ; does not change Angular Display Mode (Tag : π)
Set number of digits displayed	Command	3	NDEC	NDEC ₃	Display	Set number of digits displayed to X ; also set by DSP or interactively from menu MLoads: (parameter for FIX ; SCI ; ENG ; UNIT ; SIG ; ALL) (Info : Range is [0, 19])
Set number range	Setting (pgm)	6145	RNG	RNG ₆₁₄₅	Reals	Set number range as 10 ⁿⁿ , where nn in [99, 6145] (TAM : RNG ____ TamNonReg menu ; Info : numbers smaller than 10 ^{-RNG} (or the value set by HIDE) will be displayed as ≈ 0 . ; numbers greater than 10 ^{RNG} will be displayed as ' ω ' (or ∞ if RNG is 6145 and provided flag SPCRES is SET))
Set number range	Setting (pgm, old)	6145	>RNG<		Reals	Old version of the setting RNG that could not use indirect addressing (Info : May be found in older user programs, use RNG on [DISP.2]gF5 instead)
Set numeric (one digit)	Alpha-shift (special)		<empty>		Text input	Set next alpha entry to numeric (one digit) or other alpha g-shifted character (Shortcut : alpha g + <char>)
Set printer delay	Setting (pgm)	18	Δ DELAY	Δ DELAY ₁₈	Printing	Set printer delay time between lines (TAM : Δ DELAY __ Tam menu ; Info : Set printer delay default (18) is set by DMCP ; on the simulator, the default is 0)
Set RAD tag or convert to RAD	Function (monadic)		$\rightarrow$ RAD	$\rightarrow$ RAD	Angle tagging or conversion	If untagged, set tag to RAD (radians) ; if tagged, convert X to RAD ; does not change Angular Display Mode (Tag : $^{\circ}$)
Set real number display format	Command	0	DF	DF ₀	Reals	Set real number display format to X ; also set interactively from menu MLoads: (formats FIX ; SCI ; ENG ; UNIT ; SIG ; ALL) (Info : FIX : 1 ; SCI : 2 ; ENG : 3 ; UNIT : 5 ; SIG : 4 ; ALL : 0)
Set RJ profile	Setting (group)	OFF	RJ		Developer	Set RJ profile (Info : RJ is one of the C47/R47 developers)
Set rounding mode	Setting (pgm)	0	RMODE	RMODE ₀	Reals	Set floating point rounding mode ; used for RSD and RDP ; also used when converting from the extended precision internal format to packed reals ; 0 : $\frac{1}{2}E$ = round half even ; 1 : $\frac{1}{2}\uparrow$ = round half up ; 2 : $\frac{1}{2}\downarrow$ = round half down ; 3 : $\leftarrow 0$ = round away from zero ; 4 : $\rightarrow 0$ = round towards zero ; 5 : $\lceil x \rceil$ = ceiling ; 6 : $\lfloor x \rfloor$ = floor (TAM : RMODE _ TamNonReg menu ; Info : may be abbreviated as RM in status overviews)
Set significant digits	Setting (pgm)	34	SDIGS	SDIGS ₃₄	Mathematics	Set the number of significant digits (1-34) for rounding after each operation ; sets tolerance of solvers, plotting and CONVG? ; value of 0 sets maximum precision (34) (TAM : SDIGS __ TamNonReg menu ; Info : when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS)
Set significant digits	Setting (pgm, old)	34	>SDIGS<		Mathematics	Old version of the setting SDIGS that used stack input (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use SDIGS on [MODE.1]F4 instead)
Set significant digits for fractions	Setting (pgm)	34	FDIGS	FDIGS ₃₄	Fractions	Set the number of significant digits (1-34) used by the approximations of the fraction modes ; SBI $\approx$ indicates fractions can be approximated to be close enough (displayed if FDIGS < 34) (TAM : FDIGS __ TamNonReg menu ; Info : SBI [+ $\approx$] is shown if flag SBfrac is SET)
Set time	Setting (pgm, HW)		SETTIM	SETTIM	Time functions	Set time ; hardware only (DMCP setting) (Info : Error 126 -- Not available on the simulator -- is raised when this setting is performed on the simulator)
Set volume	Setting (pgm, HW)	11	VOL	VOL ₁₁	Input-Output	Set volume (0-11) ; hardware only (DMCP setting) (TAM : VOL __ TamNonReg menu ; Info : Error 126 -- Not available on the simulator -- is raised when this setting is performed on the simulator)
Set word size	Setting (pgm)	64	WSIZE	WSIZE ₆₄	Bits and bytes	Set word size in bits, for Short integer (8.02-8.16) (TAM : WSIZE __ TamNonReg menu menu ; Info : <m> in SBI indicates sign mode (menu BITSET) ; SBI 64:<m> is shown if flag SBint is SET)

FullName	Type	Default	Label	Catalog	Category	Extended description
SETT	User Program		SETT		Test programs	SETT example program, available to load from PROGRAMS/SETT.p47, using READP -- see https://forum.swissmicros.com/viewtopic.php?p=33113#p33113 (Info : Example to effect bundled settings for different calculator setups)
Sexagesimal	Function (monadic)		.ms ⁻¹	.ms ⁻¹	Time/angle conversions	Convert hh:mm:ss hours or dd°mm:ss" degrees to sexagesimal format number (untag) (TI : hh/dd.mmss ; Info : puts sexagesimal NIM input of .ms back as decimal number on the stack)
Shade curve	Setting	OFF	∫AREA		Plotting	Switch on shading the trapezoid integral from the graph points ; not programmable - in PEM, use flag PLshad (Info : ∫ Trapezoid integral is displayed ; switching ON ∫AREA also switches ON Δy/Δx ; switching OFF Δy/Δx also switches OFF ∫AREA ; cannot be combined with N.VECT, VECT)
Shade curve	Flag	CLEAR	PLshad		Plotting	SET for shading the trapezoid integral from the graph points ; CLEAR for not shading the curve (Info : ∫ Trapezoid integral is displayed)
Shift Alpha register	Command (42)		42ASHF	42ASHF	Compatibility	Shift the six leftmost characters out of the Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible command (Info : For empty text string, 42ASHF acts as NOP ; Error 64 -- No string in alpha register -- may be raised)
Shift Digits Left	Function (monadic)		SDL	SDL	Reals	Shift digits of Integer Part of real number to the left (zeros are added) (TAM : SDL __ TamNonReg menu)
Shift Digits Right	Function (monadic)		SDR	SDR	Reals	Shift digits of Integer Part of real number to the right (digits are dropped) (TAM : SDR __ TamNonReg menu)
Shift f	f-shift		f	f	Keyboard	Shift f (yellow) (Info : SBI position depends on flag SBshfR)
Shift f/g	f/g-shift		f/g	f/g	Keyboard	Single press : shift f (yellow) ; double press : shift g (blue) (Info : SBI f ; g is shown if flag SBshfR is SET ; note that USER mode assignment to longerpress f/g is possible, if either HOME ^g or MYM ^g is SET, see Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard [f/g]
Shift g	g-shift		g	g	Keyboard	Shift g (blue) (Shortcut : double [f/g] ; longerpress [f/g] ; Info : SBI position depends on flag SBshfR)
Shift Left	Function (monadic)		SLn	SLn	Number bases	Shift Left with number of bits (trailing input) (TAM : SLn __ TamNonReg menu)
Shift Left (1)	Function (monadic)		SL	SL	Number bases	Shortcut to Shift Left (1 bit)
Shift Right	Function (monadic)		SRn	SRn	Number bases	Shift Right with number of bits (trailing input) (TAM : SRn __ TamNonReg menu)
Shift Right (1)	Function (monadic)		SR	SR	Number bases	Shortcut to Shift Right (1 bit)
Shift time-out of 4s	Setting	OFF	SH.4s	SH.4s □	User interface	Switch on shift time-out of 4s ; not programmable - in PEM, use flag SH.4s (Info : For layouts containing key [f/g] only)
Shift time-out of 4s	Flag	CLEAR	SH.4s		User interface	SET for shift time-out of 4s ; CLEAR for shift time-out of 4s inactive (Info : For layouts containing key [f/g] only)
short cwt to kg	Function (monadic, linked)		short cwt→kg		Mass conversions	Convert short hundredweight to kilogram (TI : kg:)
Short integer	Function (monadic)		SINT	SINT	Integers	Convert to Short integer (8.02-8.16)
Short integer split screen lines	Setting (pgm)	2	dSI	dSI ₂	Number bases	Set the short integer split screen lines for the display of X in #BASE Mode (TAM : dSI _ TamNonReg menu ; Info : Range is 0 : <none> ; 1 : HEX ; 2 : HEX/DEC ; 3 : HEX/BIN/DEC ; if flag BCD is SET, instead of HEX, BCD is displayed with subscript digits and followed by subscript _{bcd})
Short integer variables	MENU		[S.INTS]	S.INTS	Catalog	Auto-generated catalog of variables of the specified datatype : Short integer (8.02-8.16) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_S-INTS_page_1.pdf
Short integer?	Command (logical)		SINT?	SINT?	Programming	Test type of X is Short integer (8.02-8.16) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Short right arrow	Character		→		Characters	Character → (Fontcode : 21C0 ₁₆)
short ton to kg	Function (monadic, linked)		short ton→kg		Mass conversions	Convert short ton to kilogram (TI : kg:)

FullName	Type	Default	Label	Catalog	Category	Extended description
Show	Command		SHOW	SHOW	Stack and registers	Show item in maximum detail, according to data type (tag) : Long integers up to 10^{123} will be displayed in large numeric font ; up to 10^{416} in the medium standard font and up to 10^{1000} in tiny font ; Real numbers in SIG 6, UNIT 3, SCI 3 ; Complex numbers (RECT and POLAR) in SIG 4 ; Virtual compound data types are shown with all digits in large, medium or tiny font (Info : Key [R/S] changes view for Long integers ; Virtual compound data types (font size, next page) ; use [▲] or [▼] to scroll through all registers (and matrix variables) ; when menu XFCNS is open, if XYZ contains result in Virtual compound data type, SHOW displays X : XY+Z = <value> and ditto for T : TA+B and for the dedicated triple register storage, e.g. R90 : FMA: (fused multiply-add) ; Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf) ; Keyboard f[.]
Show all SI prefixes	Flag	CLEAR	PFX.All		Plotting	SET for showing full range of SI prefixes in UNIT display mode ; CLEAR for showing limited range of SI prefixes in UNIT display mode (Info : Full range is 10^{-30} to 10^{30} ; limited range is 10^{-15} to 10^{15} ; not applicable when flag 1024 th is SET ; Ref : https://47calc.com/doc/C47/Reference/C47_UNIT_prefix.pdf)
Show angle symbol	Flag	CLEAR	SBang		Status	SET for displaying angle symbol (°) in status bar ; CLEAR for not displaying angle symbol (°) in status bar (Info : Setting flag SBang also sets SBadm ; clearing SBadm also clears flag SBang)
Show battery depletion	Flag	CLEAR	SBbatV		Status	SET for displaying battery depletion (🔋) in status bar ; CLEAR for not displaying battery depletion (🔋) in status bar (Info : If SBbatV is CLEAR, the regular icon (🔋) will show, but only when the battery is low (flag LOWBAT is SET) ; when SBbatV is SET the special battery symbol has length proportional to 2.054 V to 3.045 V)
Show complex mode	Flag	SET	SBcpx		Status	SET for displaying Complex mode (L ; ⊙) in status bar ; CLEAR for not displaying Complex mode (L ; ⊙) in status bar
Show complex results	Flag	CLEAR	SBcr		Status	SET for displaying Complex results (C ; R) in status bar ; CLEAR for not displaying Complex results (C ; R) in status bar
Show date	Flag	SET	SBdate		Status	SET for displaying date (CLK ; YY) in status bar ; CLEAR for not displaying date (CLK ; YY) in status bar (Info : SBdate, SBtime and SBwoy are linked, only two out of three can be SET at most)
Show degree symbol	Flag	SET	SBadm		Status	SET for displaying degree symbol (°) in status bar ; CLEAR for not displaying degree symbol (°) in status bar (Info : Setting flag SBang also sets SBadm ; clearing SBadm also clears flag SBang)
Show Fractions Mode and #BASE Mode	Flag	SET	SBfrac		Status	SET for displaying Fractions Mode and #BASE Mode (a^b/n ; b/n ; [+≐] ; $a^b/c \times I$; $b/c \times I$; [+≐] ; #BASE ; #KEYA-F) in status bar ; CLEAR for not displaying Fractions Mode and #BASE Mode (a^b/n ; b/n ; [+≐] ; $a^b/c \times I$; $b/c \times I$; [+≐] ; #BASE ; #KEYA-F) in status bar
Show integer mode	Flag	SET	SBint		Status	SET for displaying integer mode (<w>;<m>) in status bar ; CLEAR for not displaying integer mode (<w>;<m>) in status bar (Info : <w> in SBI indicates word size (menu BITSET) ; <m> in SBI indicates sign mode (menu BITSET))
Show matrix mode	Flag	CLEAR	SBmx		Status	SET for displaying matrix mode (wrap ; grow) in status bar ; CLEAR for not displaying matrix mode (wrap ; grow) in status bar
Show overflow/carry mode	Flag	SET	SBoc		Status	SET for displaying overflow/carry mode (° ; c) in status bar ; CLEAR for not displaying overflow/carry mode (° ; c) in status bar
Show printing	Flag	SET	SBprn		Status	SET for displaying printing (🖨) in status bar ; CLEAR for not displaying printing (🖨) in status bar
Show serial I/O	Flag	SET	SBser		Status	SET for displaying serial I/O (🔌) in status bar ; CLEAR for not displaying serial I/O (🔌) in status bar
Show shift on the right	Flag	CLEAR	SBshfR		Status	SET for displaying shift on the right (f ; 9) in status bar ; CLEAR for displaying shift on the left (f ; 9) in status bar
Show stack size	Flag	CLEAR	SBss		Status	SET for displaying stack size (8 ; 4) in status bar ; CLEAR for not displaying stack size (8 ; 4) in status bar
Show stopwatch running	Flag	SET	SBstw		Status	SET for displaying stopwatch running (⌚) in status bar ; CLEAR for not displaying stopwatch running (⌚) in status bar
Show time	Flag	CLEAR	SBtime		Status	SET for displaying time (HH24:MM ; HH:MMam/pm) in status bar ; CLEAR for not displaying time (HH24:MM ; HH:MMam/pm) in status bar (Info : SBtime, SBdate and SBwoy are linked, only two out of three can be SET at most)

FullName	Type	Default	Label	Catalog	Category	Extended description
Show TVM mode	Flag	SET	SBtvm		Status	SET for displaying TVM mode (END ; BEG) in status bar ; CLEAR for not displaying TVM mode (END ; BEG) in status bar
Show Week of Year and day number	Flag	CLEAR	SBwoy		Status	SET for displaying Week of Year and day number (Ww#-d#) in status bar ; CLEAR for not displaying Week of Year and day number (Ww#-d#) in status bar (Info : SBwoy, SBdate and SBtime are linked, only two out of three can be SET at most)
Shuffle stack	Command		Σ	Σ	Stack	Shuffle stack: replace X Y Z T by selection of X Y Z T (TAM : Σ ____ TamShuffle menu)
SIGMA	Character		Σ		Characters	Character Σ (Shortcut : alpha g[Σ+] ; Info : Fontcode : 03A316 ; press [▼] for σ at [α...ω.2]F2)
sigma	Character		σ		Characters	Character σ (Fontcode : 03C316 ; Info : press [▲] for Σ at [A...Ω.2]F2)
SIGMA	Character		Σ		Characters	Character Σ (Fontcode : 03A316 ; Info : press [▼] for σ at [α...ω.2]F3)
Sigma function (k = 1)	Function (monadic)		σ ₁	σ ₁	Mathematics	Sigma function (k = 1) using either a FACTORS matrix or Long integer as input in X
Sigma-	Command		Σ-	Σ-	Summary statistics	Remove data from the statistics matrix (STATS) and put the values on the stack (TI : nnn data points ; Info : Σ- pushes values onto the stack unless automatic stack lift is disabled, e.g. by Σ+)
Sigma+	Command		Σ+	Σ+	Summary statistics	Enter data into the statistics matrix (STATS) ; the [Σ+] key also is the hotkey that can be used for special key assignments in NORMAL mode, using menu Σ+ KEY (TI : nnn data point(s) ; Info : if a nx2 matrix is in X, Σ+ appends the data to the STATS matrix (creating it as necessary) ; Σ+ disables automatic stack lift for the next entry) ; Keyboard [Σ+]
Sign	Function (monadic)		sign	sign	Reals	Sign of number (Info : Sign is -1 for negative numbers, 0 for zero, +1 for positive numbers ; for nonzero Complex numbers, sign(z) = z / z (a.k.a. UNITV))
Sign and mantissa	Setting (pgm)	OFF	SIGNMT	SIGNMT O	Bits and bytes	Set sign and mantissa mode for Short integer (ISM = -1) (Info : <w> in SBI indicates word size (menu BITSET) ; SBI <w>s is shown if flag SBint is SET)
Signed 16 bits	Setting (pgm)	OFF	16:2		Number bases	Shortcut to set word size to 16 bits signed (ISM = 2) -- 2's complement (Info : SBI 16:2 is shown if flag SBint is SET)
Signed 32 bits	Setting (pgm)	OFF	32:2		Number bases	Shortcut to set word size to 32 bits signed (ISM = 2) -- 2's complement (Info : SBI 32:2 is shown if flag SBint is SET)
Signed 64 bits	Setting (pgm)	ON	64:2		Number bases	Shortcut to set word size to 64 bits signed (ISM = 2) -- 2's complement (Info : SBI 64:2 is shown if flag SBint is SET)
Signed 8 bits	Setting (pgm)	OFF	8:2		Number bases	Shortcut to set word size to 8 bits signed (ISM = 2) -- 2's complement (Info : SBI 8:2 is shown if flag SBint is SET)
SIGnificant digits notation	Setting (pgm)	OFF	SIG	SIG O	Display	Set numeric display mode to significant digits notation with nn+1 digits (NDEC = nn = 0-19 ; DF = 4) ; switching over to scientific or engineering notation when number of rounded trailing zeros exceeds group size (IPGRP) (TAM : SIG __ TamNonReg menu ; Info : this setting applies to Real numbers and Complex numbers)
Silver ratio	Constant		δ _s		Constants	Constant # 81 δ _s r.silver = +2.414213562373095048801688724209698 -- see https://arxiv.org/pdf/2309.05050.pdf (Info : δ _s = 1 + √2)
Sinc	Function (monadic)		sinc	sinc	Mathematics	Calculate (Sine of X) / X (Info : Integers and untagged reals are assumed to be radians)
Sinc pi	Function (monadic)		sincπ	sincπ	Mathematics	Calculate (Sine of π × X) / (π × X) (Info : Integers and untagged reals are assumed to be radians)
Sine	Function (monadic)		SIN	SIN	Trigonometry	Sine ; Keyboard [SIN]
Sine	Symbol		SIN		Trigonometry and characters	Sine (Shortcut : alpha g[SIN] ("SIN"))
Single high-reversed-9 quotation mark	Character		'		Characters	Character ' (Fontcode : 201B16)
Single low-9 quotation mark	Character		,		Characters	Character , (Fontcode : 201A16)
Single step	Command (nonpgm)		SST	SST	Programming	Single step (Shortcut : [▼])
Skip	Command (PEM)		SKIP	SKIP	Programming	Skip n program steps (TAM : SKIP ____ TamNonReg menu ; Ref : https://47calc.com/doc/C47/Reference/C47_Skipping_program_steps.pdf)
Slash	Character		/		Characters	Character / (Shortcut : alpha g[R/S] ; Info : Fontcode : 002F16)
slinch to kg	Function (monadic, linked)		slinch→kg		Mass conversions	Convert slinch to kilogram ; this is the same conversion as lbf-s ² /in→kg on [Mass:2]gF3 (TI : kg)
Slow mode	Flag	CLEAR	SLOW		System	SET for slow mode ; CLEAR for slow mode inactive (Info : Slow mode limits battery drain)

FullName	Type	Default	Label	Catalog	Category	Extended description
slug to kg	Function (monadic, linked)		slug→kg		Mass conversions	Convert slug to kilogram ; this is the same conversion as lbf·s ² /ft→kg on [Mass:2] gF1 (TI : kg:)
SlvCnst	User Program		SlvCnst		Test programs	SlvCnst test program, available to load from PROGRAMS/ALLPGMS/SlvCnst.p47, using READP (after unzipping resources/testPgms.zip)
SlvExtr	User Program		SlvExtr		Test programs	SlvExtr test program, available to load from PROGRAMS/ALLPGMS/SlvExtr.p47, using READP (after unzipping resources/testPgms.zip)
Solve cubic	Command		SLVC	SLVC	RPN Calculus and plotting	Solve the cubic equation : $a_3 \times x^3 + a_2 \times x^2 + a_1 \times x + a_0 = 0$; parameters taken from 4 coefficients on the stack or from a 1x4 or 4x1 coefficient vector in X ; SLVC also solves linear equations for 1x2 or 2x1 input and quadratic for 1x3 or 3x1 ; tolerance set by SDIGS (Info : a ₃ ENTER a ₂ ENTER a ₁ ENTER a ₀ SLVC ; roots 1, 2, 3 in Z, Y, X ; for vector input, roots are returned in a vector ; tzyx→v ₄ is available on menu [v←→v.1]F5 to create a 1x4 coefficient vector (also yx→v ₂ , zyx→v ₃))
Solve polynomial	Command		SLVP	SLVP	RPN Calculus and plotting	Solve the polynomial equation : $a_n \times x^n + a_{n-1} \times x^{n-1} + \dots + a_0 = 0$, $n \leq 11$; parameters taken from a 1 x n+1 or n+1 x 1 coefficient vector in X ; tolerance set by SDIGS (Ref : https://47calc.com/doc/Application%20Notes/AN0033_C47_R47_DE_Polynomial_roots.pdf)
Solve quadratic	Command		SLVQ	SLVQ	RPN Calculus and plotting	Solve the quadratic equation : $a \times x^2 + b \times x + c = 0$; parameters taken from 3 coefficients on the stack or from a 1x3 or 3x1 coefficient vector in X ; SLVQ also solves linear equations for 1x2 or 2x1 input and cubic for 1x4 or 4x1 ; tolerance set by SDIGS (Info : a ENTER b ENTER c SLVQ ; roots 1, 2 in Y, X ; for vector input, roots are returned in a vector ; zyx→v ₃ is available on menu [v←→v.1]F3 to create a 1x3 coefficient vector (also yx→v ₂ , tzyx→v ₄))
Solver (RPN)	Command (submnu)		SOLVE	SOLVE	RPN Calculus and plotting	Real solver for the RPN program (with MVAR variables) selected with TamLbOnly menu ; presents menu for initial guesses and variable selection ; interrupt by [EXIT] ; tolerance set by SDIGS ; in Program Entry Mode, the RPN program must be specified by PGMSLV and the variable to solve for using the TamVarOnly menu ; SOLVE will skip the next program step if no root is found (TAM : SOLVE __ TamLbOnly menu (uses TamVarOnly menu in PEM, to specify variable to solve for) ; Info : displays current top and bottom results and iteration counter ; shown if flag MONIT is SET ; Displays : Accuracy ≈ ; <var1..n> =)
Solver [EQN]	MENU		[f Solve]	f Solve	Solver	Solver (variables) menu for the algebraic expression (= 0) entered in NEW ; enter value and press <var> button(s) to initialise variable(s), then press button for variable to be solved for by the solver(s) in menu ToolS ; if only one variable exists it will be selected and starred automatically (Info : TI : "Select Solver Variable" is presented if ToolS is activated without a variable having been selected first) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_f_Solve_page_1.pdf
Solver tools	MENU		[ToolS]	ToolS	Solver	Solver tools and parameter settings (Ref : https://47calc.com/doc/C47/Reference/C47_Solver_Result_Codes.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_ToolSlv_page_1.pdf
Solving	Flag (system)	CLEAR	SOLVING		Solver	SET for solver running ; CLEAR for solver not running
Sort registers	Command (PEM)		R-SORT	R-SORT	Programming	Sort registers by ascending value, using range number in X (sss.nn means registers from sss through sss + nn - 1) (Info : R-SORT can also sort by time value stored in the registers)
Space	Character				Characters	Character " " (Fontcode : 0020 ₁₆) ; Keyboard alpha [+]
Space symbol	Character		␣		Characters	Character ␣ (Fontcode : 2423 ₁₆)
Special [Σ+] hotkey assignments	MENU		[Σ+ KEY]	◻Σ+KEY	Customisation	Special hotkey assignments to key [Σ+] in NORMAL mode Docs: https://47calc.com/doc/C47/Menus/C47_Menu_NRMKEY_page_1.pdf
Special results	Setting	ON	SPCRES	SPCRES ▣	Mathematics	Switch on special results ; not programmable - in PEM, use flag SPCRES (Info : Special results are: infinity (±∞) and not-a-number (NaN), an error will not occur for such values when SPCRES is SET ; also, ±0. may be used)
Special results	Flag	SET	SPCRES		Mathematics	SET for special results ; CLEAR for special results inactive (Info : Special results are: infinity (±∞) and not-a-number (NaN), an error will not occur for such values when SPCRES is SET ; also, ±0. may be used)

FullName	Type	Default	Label	Catalog	Category	Extended description
Special?	Command (logical)		SPEC?	SPEC?	Programming	Test X is special ($\neq$ or NaN)
Specify RPN program for $\int f d$	Command		PGMINT	PGMINT	RPN Calculus and plotting	In Program Entry Mode, specify the RPN program (with MVAR variables) to be used as the expression, store values in variable(s), then open menu $\int f d$ and select integrator and variable to be integrated for, integrator limits set from stack (Y, X) (TAM : PGMINT __ TamLbOnly menu ; Info : PGMINT can nest PGMINT inside : nesting is limited to 3, respectively 4 levels, on new models and simulator, but nesting is limited to 2 levels on DM42 hardware ; Error 66 -- Nesting too deep -- may be raised)
Specify RPN program for f' , f''	Command	0	PGMDRV	PGMDRV	RPN Calculus and plotting	In Program Entry Mode, specify the RPN program (with MVAR variables) to be used as the function to be differentiated, store values in variable(s), then activate f' or f'' and specify variable to differentiate for and step size (TAM : PGMDRV __ TamLbOnly menu)
Specify RPN program for PLT f	Command		PGMPLT	PGMPLT	RPN Calculus and plotting	In Program Entry Mode, specify the RPN program (with MVAR variables) to be used as the function to be plotted, store values in variable(s), then activate PLT f and specify variable to plot for, X-axis limits set from stack (Y, X) (TAM : PGMPLT __ TamLbOnly menu ; Info : PGMPLT can nest PGMINT and PGMSLV inside : nesting is limited to 3, respectively 4 levels, on new models and simulator, but plot nesting is disabled on DM42 hardware ; Error 66 -- Nesting too deep -- may be raised ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS)
Specify RPN program for SOLVE	Command		PGMSLV	PGMSLV	RPN Calculus and plotting	In Program Entry Mode, specify the RPN program (with MVAR variables) to be used as the expression (= 0), store values in variable(s), then call SOLVE and specify variable to be solved for, solver estimates set from stack (Y, X) ; tolerance set by SDIGS, but the solver converges to graph precision while (nested inside) plotting (TAM : PGMSLV __ TamLbOnly menu ; Info : PGMSLV can nest PGMINT and PGMSLV inside : nesting is limited to 3, respectively 4 levels, on new models and simulator, but nesting is limited to 2 levels on DM42 hardware ; Error 66 -- Nesting too deep -- may be raised ; when SDIGS is set to the maximum value of 34, plotting uses 15 instead, otherwise it uses the value set by SDIGS)
Speed	User Program		Speed		Test programs	Speed test program, available to load from PROGRAMS/ALLPGMS/Speed.p47, using READP (after unzipping resources/testPgms.zip)
Speed conversions	MENU		[Speed:]	Speed:	Speed conversions	Convert between units of speed (Info : Flag CONV _{HP} may be SET for <to> $\leftrightarrow$ <to> unit conversion buttons ; CLEAR for <from> $\rightarrow$ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Speed_page_1.pdf
Speed of light (vacuum)	Constant		c		Constants	Constant # 5 c lightspeed = 2.99792458×10^8 (Unit : m/s)
Spherical angle	Character		ξ		Characters	Character ξ (Fontcode : 2222 ₁₆)
SPIRAL	User Program		SPIRAL		Test programs	SPIRAL test program, available to load from PROGRAMS/ALLPGMS/SPIRAL.p47, using READP (after unzipping resources/testPgms.zip)
SPIRALk	User Program		SPIRALk		Test programs	SPIRALk example program, available to load from PROGRAMS/SPIRALk.p47, using READP -- see https://forum.swissmicros.com/viewtopic.php?p=35422#p35422 (Info : Revised spiral program by Jaco Mostert, modified by RAPism, barrymead)
Square	Function (monadic)		x^2	x^2	Mathematics	Square of X ; Keyboard $f[\sqrt{x}]$
Square matrix?	Command (logical)		M.SQR?	M.SQR?	Programming	Test X is a square matrix (test function MATR? is true) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
Square root	Symbol		$\sqrt{}$		Mathematics and characters	Square root (Shortcut : alpha g $\sqrt{}$; Info : Fontcode : 221A ₁₆)
Square root	Function (monadic, legacy)		$\sqrt{}$		Mathematics	Legacy version of function $\sqrt{x}$: Square root of X (Info : Function $\sqrt{}$ is superseded by $\sqrt{x}$ on $\sqrt{}$)
Square root	Character		$\sqrt{}$		Mathematics and characters	Square root (Fontcode : 221A ₁₆)
Square root	Function (monadic)		$\sqrt{x}$	$\sqrt{x}$	Mathematics	Square root of X (Info : When X is a matrix $\sqrt{x}$ calculates its square root (MSQRT)) ; Keyboard $f[\sqrt{x}]$
Square root of matrix	Function (monadic)		MSQRT	M.SQRT	Matrix operations	Square root of matrix in X : if $M = \text{MSQRT}(X)$, $M \times M = X$, where $\times$ denotes matrix multiplication (Shortcut : $\sqrt{x}$; Info : Error 20 -- No root found or Error 21 -- Matrix mismatch may be raised (the latter when the matrix is not square))
SST	Character		▽		Characters	Character ▽ (Fontcode : 21CB ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Stack	MENU		[STK]	STK	Stack	Stack functions ; Keyboard g[xzy] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_STK_page_1.pdf
Stack display lines	Setting (pgm)	4	dSTACK	dSTACK ₄	Stack	Set the number of stack registers to be displayed (TAM : dSTACK _ TamNonReg menu)
Stack size 4	Setting (pgm)	OFF	SSIZE4	SSIZE4 0	Stack	Switch on 4 register stack (Info : SBI 8 ; 4 is shown if flag SBss is SET)
Stack Size 8	Setting (pgm)	ON	SSIZE8	SSIZE8 0	Stack	Switch on 8 register stack (Info : SBI 8 ; 4 is shown if flag SBss is SET)
Stack Size 8	Flag	SET	SSIZE8		Stack	SET for 8 register stack ; CLEAR for 4 register stack (Info : SBI 8 ; 4 is shown if flag SBss is SET)
Standard atmospheric pressure	Constant		p ₀		Constants	Constant # 38 p ₀ press.atm = +1.01325 × 10 ⁵ (Unit : Pa)
Standard Earth acceleration	Constant		g ₀		Constants	Constant # 18 g ₀ acc.earth = +9.80665 (Unit : m/s ²)
Standard error of the mean	Command		s _m	s _m	Summary statistics	Standard error of the mean -- see Formula_SM.png : https://47calc.com/doc/Images/Formula_SM.png (TI : s _{mx} = ; s _{my} =)
Standard error of the weighted mean	Command		s _{mw}	s _{mw}	Summary statistics	Standard error of the weighted mean -- see Formula_SMW.png : https://47calc.com/doc/Images/Formula_SMW.png (TI : s _{mw} =)
Standard errors	Command		s(a)	s(a)	Plotting and curve fitting	Standard errors of line fitted ; s(a ₀) in X ; s(a ₁) in Y (Info : Works for ExpF ; LinF ; LogF ; OrthoF ; PowerF ; does not work for CauchF ; GaussF ; HypF ; ParabF ; RootF)
Standard normal cdf (lower)	Function (monadic)		Φ _L	Φ _L	Probability (real)	Standard normal cumulative distribution (lower tail)
Standard normal cdf (upper)	Function (monadic)		Φ _U	Φ _U	Probability (real)	Standard normal cumulative distribution (upper tail)
Standard normal distribution	MENU		[Φ:]	Φ:	Probability (real)	Standard normal probability distribution (continuous) (Info : mean = 0 ; standard deviation = 1) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_StdNorml_page_1.pdf
Standard normal pdf	Function (monadic)		φ _p	φ _p	Probability (real)	Standard normal probability density function
Standard normal qf (inverse)	Function (monadic)		φ ⁻¹	φ ⁻¹	Probability (real)	Standard normal inverse cumulative distribution (quantile)
Standard temperature	Constant		T ₀		Constants	Constant # 51 T ₀ temp.stand = +2.7315 × 10 ² (Unit : K)
Star (Wye) to Delta	Function (triadic)		Y → Δ	Y → Δ	Electrical engineering	Convert delta connected impedances X, Y, Z to star impedances X, Y, Z (TI : ca : ; ab : ; bc :)
Start/stop stopwatch	Command		R/S		Stopwatch	Start/stop the stopwatch (Shortcut : [R/S] (STOPW active))
STAT000	User Program		STAT000		Test programs	STAT000 test program, available to load from PROGRAMS/ALLPGMS/STAT000.p47, using READP (after unzipping resources/testPgms.zip)
STAT001	User Program		STAT001		Test programs	STAT001 test program, available to load from PROGRAMS/ALLPGMS/STAT001.p47, using READP (after unzipping resources/testPgms.zip)
STAT002	User Program		STAT002		Test programs	STAT002 test program, available to load from PROGRAMS/ALLPGMS/STAT002.p47, using READP (after unzipping resources/testPgms.zip)
STAT111	User Program		STAT111		Test programs	STAT111 test program, available to load from PROGRAMS/ALLPGMS/STAT111.p47, using READP (after unzipping resources/testPgms.zip)
STAT113	User Program		STAT113		Test programs	STAT113 test program, available to load from PROGRAMS/ALLPGMS/STAT113.p47, using READP (after unzipping resources/testPgms.zip)
STAT115	User Program		STAT115		Test programs	STAT115 test program, available to load from PROGRAMS/ALLPGMS/STAT115.p47, using READP (after unzipping resources/testPgms.zip)
STATgr	User Program		STATgr		Test programs	STATgr test program, available to load from PROGRAMS/ALLPGMS/STATgr.p47, using READP (after unzipping resources/testPgms.zip)
Statistics	MENU		[STAT]	STAT	Summary statistics	Statistics functions (Ref : https://47calc.com/doc/C47/Reference/C47_Formulas.pdf) ; Keyboard f[:] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_STAT_page_1.pdf
Statistics matrix	Variable (matrix)		STATS	STATS	Plotting and statistics	Reserved Matrix variable (cannot be deleted) for the statistics matrix (STATS) ; created from data entered using I+ ; not created after RESET (TI : Re-calculating sums ... ; may be shown when storing or loading the statistics matrix)
Stats range	Command		XRANGE	XRANGE	Summary statistics	Range for both X and Y ; this is equal to MAX - MIN of the statistics matrix (STATS) (TI : rg _x = ; rg _y =)
Status	Browser		STATUS	STATUS	Status	Show status pages (status overview, system flags, flags 00-99, lettered flags) (Info : Press [EXIT] to exit Status and browse using [▲] and [▼] ; browser FLGS (g[▼]) shows the same status pages in a different order ; Ref : https://47calc.com/doc/C47/Reference/C47_Flags_p1.pdf)
Stefan-Boltzmann constant	Constant		σ _B		Constants	Constant # 73 σ _B c.stephol = +5.670374419184429453970996731889231 × 10 ⁻⁸ (Unit : W/m ² K ⁴)
Step forward	Command		NEXT	NXTPER	Financial	Step the window forward : P1 ← P1 + <window size>, P2 ← P2 + <window size>

FullName	Type	Default	Label	Catalog	Category	Extended description
stone to kg	Function (monadic, linked)		stone→kg		Mass conversions	Convert stone to kilogram (TI : kg:)
Stop program	Command		R/S	STOP	Programming	Stop program (Info : In Program Entry Mode, R/S enters STOP)
Stopwatch	App		STOPW	STOPW	Time functions	Stopwatch with running time, counter and countdown (playing BEEP after running down) ; Keyboard g[0]
Stopwatch	Character		⌚		Characters	Character ⌚ (Fontcode : 23F1 ₁₆)
Stopwatch key [.]	Shortcut (key)		[.]		Stopwatch	Keyboard shortcut for button LAP→R "Store lap time in register" ; Keyboard [.]
Stopwatch key [←]	Shortcut (key)		[←]		Stopwatch	Keyboard shortcut for button RESET "Reset stopwatch" ; Keyboard [←]
Stopwatch key [+]	Shortcut (key)		[+]		Stopwatch	Keyboard shortcut for button LAP→Σ "Add lap time to STATS" ; Keyboard [+]
Stopwatch key [ENTER]	Shortcut (key)		[ENTER]		Stopwatch	Keyboard shortcut for button TIM→R "Store time in register" ; Keyboard [ENTER]
Stopwatch key [R/S]	Shortcut (key)		[R/S]		Stopwatch	Keyboard shortcut for button R/S "Start/stop stopwatch" ; Keyboard [R/S]
Stopwatch key [Σ+]	Shortcut (key)		[Σ+]		Stopwatch	Keyboard shortcut for button TIM→Σ "Add time to STATS" ; Keyboard [Σ+]
Stopwatch running	Flag (system)	CLEAR	RUNTIM		Stopwatch	SET for stopwatch running; CLEAR for stopwatch not running (Info : SBI ⌚ is shown if flag SBstw is SET)
Store	Command		STO	STO	Stack	Store X in global register or variable and create variable if it does not exist ; maximum variable length is : 7 characters (TAM : STO __ TamSto menu (TamStoTVM when menu TVM is open) ; Info : local registers .00-.nn etc. need to be allocated using LocR nn+1 ; TI : Rnn: or '<var>' : (or R.nn: or or '<var>') ; Ref : https://47calc.com/doc/C47/Reference/C47_Variable_naming.pdf ; Keyboard [STO]
Store a in M	Command		STO _M a		Probability (int)	Store parameter a : lower limit in register M (Split screen : RegM = a =)
Store b in N	Command		STO _N b		Probability (int)	Store parameter b : upper limit in register N (Split screen : RegN = b =)
Store config	Command		STOCFG	STOCFG	System	Store config in register or variable (Shortcut : [STO] - Config ; TAM : STOCFG __ TamSto menu ; Info : displays "Configuration data" in the stack)
Store config	Command (TAM)		Config	STOCFG	Trailing input	Presented in menu TamSto to store config in register or variable (Shortcut : [STO] - Config ; TAM : STOCFG __ TamSto menu ; Info : displays "Configuration data" in the stack)
Store d ₁ in M	Command		STO _M d ₁		Probability (real)	Store parameter d ₁ : degree of freedom in register M (Split screen : RegM = d ₁ =)
Store d ₂ in N	Command		STO _N d ₂		Probability (real)	Store parameter d ₂ : degree of freedom in register N (Split screen : RegN = d ₂ =)
Store from Alpha register	Command (42)		42ASTO	42ASTO	Compatibility	Store first six characters of text string in Alpha register (default K) in register or variable ; this is a HP-42S/DM42(n) calculator compatible command (TAM : 42ASTO __ Tam menu ; Error 64 -- No string in alpha register -- may be raised)
Store K in Q	Command		STO _Q K		Probability (int)	Store parameter K : number of special items in the pool in register Q (Split screen : RegQ = K =)
Store k in Q	Command		STO _Q k		Probability (real)	Store parameter k : shape in register Q (Split screen : RegQ = k =)
Store lap time in register	Command	0	LAP→R		Stopwatch	Store lap time in register, increment CRA (Current Register Address) and reset lap timer ; subscript shows CRA (Shortcut : [.] (STOPW active))
Store maximum	Command		STO↑	STO↑	Stack	Store maximum of X and register or variable (Shortcut : [STO] - [▲] ; TAM : STO↑ __ TamSto menu)
Store maximum	Command (TAM)		...Max	STO↑	Trailing input	Presented in menu TamSto to store maximum of X and register or variable (Shortcut : [STO] - [▲] ; TAM : STO↑ __ TamSto menu)
Store minimum	Command		STO↓	STO↓	Stack	Store minimum of X and register or variable (Shortcut : [STO] - [▼] ; TAM : STO↓ __ TamSto menu)
Store minimum	Command (TAM)		...Min	STO↓	Trailing input	Presented in menu TamSto to store minimum of X and register or variable (Shortcut : [STO] - [▼] ; TAM : STO↓ __ TamSto menu)
Store N in M	Command		STO _M N		Probability (int)	Store parameter N : population size in register M (Split screen : RegM = N =)
Store n in N	Command		STO _N n		Probability (int)	Store parameter n : number of samples in register N (Split screen : RegN = n =)
Store p in P	Command		STO _P p		Probability (int)	Store parameter p : probability in register P (Split screen : RegP = p =)
Store s in S	Command		STO _S s		Probability (real)	Store parameter s : scale in register S (Split screen : RegS = s =)
Store stack	Command		STOS	STOS	Stack	Store entire stack in 4 or 8 registers (Shortcut : [STO] - Stack ; TAM : STOS __ TamSto menu)

FullName	Type	Default	Label	Catalog	Category	Extended description
Store stack	Command (TAM)		Stack	STOS	Trailing input	Presented in menu TamSto to store entire stack in 4 or 8 registers (Shortcut : [STO] - Stack ; TAM : STOS __ TamSto menu)
Store time in register	Command	0	TIM→R		Stopwatch	Store time in register and increment CRA (Current Register Address) ; subscript shows R/S (Shortcut : [ENTER] (STOPW active))
Store triple I	Command		3STOI ₉₃	3STOI ₉₃	Electrical engineering	Copy X, Y, Z to R93, R94, R95 ; used in menu ELEC and as dedicated registers for Virtual compound data types, as a "Triplet" stored in R93, R94, R95, interpreted as FMA (fused multiply-add) of R93 × R94 + R95 when used by extended accuracy functions in menu XFCNS ; split screen may show "No error" (Info : R93, mapped to R93, R94, R95)
Store triple V	Command		3STOV ₉₀	3STOV ₉₀	Electrical engineering	Copy X, Y, Z to R90, R91, R92 ; used in menu ELEC and as dedicated registers for Virtual compound data types, as a "Triplet" stored in R90, R91, R92, interpreted as FMA (fused multiply-add) of R90 × R91 + R92 when used by extended accuracy functions in menu XFCNS ; split screen may show "No error" (Info : R90, mapped to R90, R91, R92)
Store triple Z	Command		3STOZ ₉₆	3STOZ ₉₆	Electrical engineering	Copy X, Y, Z to R96, R97, R98 ; used in menu ELEC and as dedicated registers for Virtual compound data types, as a "Triplet" stored in R96, R97, R98, interpreted as FMA (fused multiply-add) of R96 × R97 + R98 when used by extended accuracy functions in menu XFCNS ; split screen may show "No error" (Info : R96, mapped to R96, R97, R98)
Store X into matrix element	Command		STOEL	STOEL	Matrix operations	Store X into current element of indexed matrix (Shortcut : [STO] - Config ; TI : M[I _r J _c]=<name> [<row><col>]=)
Store X into matrix element	Command (TAM)		...EL	STOEL	Trailing input	Presented in menu TamSto to store X into current element of indexed matrix (Shortcut : [STO] - Config ; TI : M[I _r J _c]=<name> [<row><col>]=)
Store X into matrix element and go to next	Command		STOSEQ	STOSEQ	Matrix operations	Store X into current element of indexed matrix, then increment column index J of indexed matrix ; wraps automatically (TI : M[I _r J _c]=<name> [<row><col>]=)
Store X into vector element	Command		STOVEL	STOVEL	Matrix operations	Store X into element n (TAM) of vector or matrix in Y (Shortcut : [STO] - ...VEL _{nn} ; TAM : STOVEL __ Tam menu)
Store X into vector element	Command (TAM)		...VEL _{nn}	STOVEL	Trailing input	Presented in menu TamSto to store X into element n (TAM) of vector or matrix in Y (Shortcut : [STO] - ...VEL _{nn} ; TAM : STOVEL __ Tam menu)
Store X into vector element	Command (old)	0	>STOVEL<		Matrix operations	Old version of the command STOVEL (Info : May be found in older user programs, use STOVEL on [MATX.1]gF3 instead)
Store X into vector element 1	Command		STOVEL ₁	STOVEL ₁	Matrix operations	Store X into element 1 of vector or matrix in Y
Store X into vector element 1	Command (TAM)		...VEL ₁	STOVEL ₁	Trailing input	Presented in menu TamSto to store X into element 1 of vector or matrix in Y
Store X into vector element 2	Command		STOVEL ₂	STOVEL ₂	Matrix operations	Store X into element 2 of vector or matrix in Y
Store X into vector element 2	Command (TAM)		...VEL ₂	STOVEL ₂	Trailing input	Presented in menu TamSto to store X into element 2 of vector or matrix in Y
Store X into vector element 3	Command		STOVEL ₃	STOVEL ₃	Matrix operations	Store X into element 3 of vector or matrix in Y
Store X into vector element 3	Command (TAM)		...VEL ₃	STOVEL ₃	Trailing input	Presented in menu TamSto to store X into element 3 of vector or matrix in Y
Store X, Y	Command		2STO	2STO	Stack	Store X, Y to two consecutive registers, specify first register using TAM (TAM : 3STO __ Tam menu)
Store X, Y, Z	Command		3STO	3STO	Stack	Store X, Y, Z to three consecutive registers, specify first register using TAM (TAM : 3STO __ Tam menu)
Store x_0 in M	Command		STO _M x_0		Probability (real)	Store parameter x_0 : location in register M (Split screen : RegM = x_0 =)
Store α in Q	Command		STO _Q α		Probability (real)	Store parameter α : shape in register Q (Split screen : RegQ = α =)
Store γ in S	Command		STO _S γ		Probability (real)	Store parameter γ : scale in register S (Split screen : RegS = γ =)
Store λ in R	Command		STO _R λ		Probability (real)	Store parameter λ : rate parameter in register R (Split screen : RegR = λ =)
Store λ in S	Command		STO _S λ		Probability (real)	Store parameter λ : scale in register S (Split screen : RegS = λ =)
Store μ in M	Command		STO _M μ		Probability (real)	Store parameter μ : location in register M (Split screen : RegM = μ =)
Store ν in M	Command		STO _M ν		Probability (real)	Store parameter ν : degrees of freedom in register M (Split screen : RegM = ν =)
Store ξ in Q	Command		STO _Q ξ		Probability (real)	Store parameter ξ : shape in register Q (Split screen : RegQ = ξ =)
Store σ in S	Command		STO _S σ		Probability (real)	Store parameter σ : scale in register S (Split screen : RegS = σ =)
Structural conversions	MENU		[Struct:]	Struct:	Miscellaneous conversions	Section and material properties, force and moment load conversions (Info : Flag CONVP may be SET for <to> <←> unit conversion buttons ; CLEAR for <from> <→> unit conversion buttons (default SET) ; Ref : https://47calc.com/doc/Application%20Notes/AN0027_C47_R47_DA_Structural_conversions.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Struct_page_1.pdf
Student's t cdf (lower)	Function (monadic)		$t_{\alpha}(x)$	$t_{\alpha}(x)$	Probability (real)	Student's t cumulative distribution (lower tail)

FullName	Type	Default	Label	Catalog	Category	Extended description
Student's t cdf (upper)	Function (monadic)		$t_{\alpha}(x)$	$t_{\alpha}(x)$	Probability (real)	Student's t cumulative distribution (upper tail)
Student's t distribution	MENU		[t:]	t:	Probability (real)	Student's t probability distribution (continuous) (TI : RegM = v =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_t_page_1.pdf
Student's t pdf	Function (monadic)		$t_p(x)$	$t_p(x)$	Probability (real)	Student's t probability density function
Student's t qf (inverse)	Function (monadic)		$t^{-1}(p)$	$t^{-1}(p)$	Probability (real)	Student's t inverse cumulative distribution (quantile)
Subscript	Alpha-shift		↓		Text input	Subscript (Shortcut : alpha g [▼])
Subscript -	Character		-		Characters	Character - (Fontcode : 208B ₁₆)
Subscript +	Character		+		Characters	Character + (Fontcode : 208A ₁₆)
Subscript 0	Character		0		Characters	Character 0 (Fontcode : 2080 ₁₆)
Subscript 1	Character		1		Characters	Character 1 (Fontcode : 2081 ₁₆)
Subscript 2	Character		2		Characters	Character 2 (Fontcode : 2082 ₁₆)
Subscript 3	Character		3		Characters	Character 3 (Fontcode : 2083 ₁₆)
Subscript 4	Character		4		Characters	Character 4 (Fontcode : 2084 ₁₆)
Subscript 5	Character		5		Characters	Character 5 (Fontcode : 2085 ₁₆)
Subscript 6	Character		6		Characters	Character 6 (Fontcode : 2086 ₁₆)
Subscript 7	Character		7		Characters	Character 7 (Fontcode : 2087 ₁₆)
Subscript 8	Character		8		Characters	Character 8 (Fontcode : 2088 ₁₆)
Subscript 9	Character		9		Characters	Character 9 (Fontcode : 2089 ₁₆)
Subscript A	Character		A		Characters	Character A (Fontcode : 24D0 ₁₆)
Subscript a	Character		a		Characters	Character a (Fontcode : 249C ₁₆)
Subscript alpha	Character		α		Characters	Character α (Fontcode : 2296 ₁₆)
Subscript B	Character		B		Characters	Character B (Fontcode : 24D1 ₁₆)
Subscript b	Character		b		Characters	Character b (Fontcode : 249D ₁₆)
Subscript C	Character		C		Characters	Character C (Fontcode : 24D2 ₁₆)
Subscript c	Character		c		Characters	Character c (Fontcode : 249E ₁₆)
Subscript D	Character		D		Characters	Character D (Fontcode : 24D3 ₁₆)
Subscript d	Character		d		Characters	Character d (Fontcode : 249F ₁₆)
Subscript delta	Character		δ		Characters	Character δ (Fontcode : 2297 ₁₆)
Subscript E	Character		E		Characters	Character E (Fontcode : 24D4 ₁₆)
Subscript e	Character		e		Characters	Character e (Fontcode : 2073 ₁₆)
Subscript earth	Character		⊕		Characters	Character ⊕ (Fontcode : 2295 ₁₆)
Subscript F	Character		F		Characters	Character F (Fontcode : 24D5 ₁₆)
Subscript f	Character		f		Characters	Character f (Fontcode : 24A1 ₁₆)
Subscript G	Character		G		Characters	Character G (Fontcode : 24D6 ₁₆)
Subscript g	Character		g		Characters	Character g (Fontcode : 24A2 ₁₆)
Subscript H	Character		H		Characters	Character H (Fontcode : 24D7 ₁₆)
Subscript h	Character		h		Characters	Character h (Fontcode : 24A3 ₁₆)
Subscript I	Character		I		Characters	Character I (Fontcode : 24D8 ₁₆)
Subscript i	Character		i		Characters	Character i (Fontcode : 24A4 ₁₆)
Subscript infinity	Character		∞		Characters	Character ∞ (Fontcode : 209F ₁₆)
Subscript J	Character		J		Characters	Character J (Fontcode : 24D9 ₁₆)
Subscript j	Character		j		Characters	Character j (Fontcode : 24A5 ₁₆)
Subscript K	Character		K		Characters	Character K (Fontcode : 24DA ₁₆)
Subscript k	Character		k		Characters	Character k (Fontcode : 24A6 ₁₆)
Subscript L	Character		L		Characters	Character L (Fontcode : 24DB ₁₆)
Subscript l	Character		l		Characters	Character l (Fontcode : 24A7 ₁₆)
Subscript M	Character		M		Characters	Character M (Fontcode : 24DC ₁₆)
Subscript m	Character		m		Characters	Character m (Fontcode : 24A8 ₁₆)
Subscript mu	Character		μ		Characters	Character μ (Fontcode : 2298 ₁₆)
Subscript N	Character		N		Characters	Character N (Fontcode : 24DD ₁₆)
Subscript n	Character		n		Characters	Character n (Fontcode : 24A9 ₁₆)
Subscript O	Character		O		Characters	Character O (Fontcode : 24DE ₁₆)
Subscript o	Character		o		Characters	Character o (Fontcode : 24AA ₁₆)
Subscript P	Character		P		Characters	Character P (Fontcode : 24DF ₁₆)
Subscript p	Character		p		Characters	Character p (Fontcode : 24AB ₁₆)
Subscript pi	Character		π		Characters	Character π (Shortcut : alpha g [▼] π (alpha g [R4]) ; Fontcode : 2C64 ₁₆)
Subscript Q	Character		Q		Characters	Character Q (Fontcode : 24E0 ₁₆)
Subscript q	Character		q		Characters	Character q (Fontcode : 24AC ₁₆)
Subscript R	Character		R		Characters	Character R (Fontcode : 24E1 ₁₆)
Subscript r	Character		r		Characters	Character r (Fontcode : 24AD ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Subscript S	Character		s		Characters	Character _s (Fontcode : 24E2 ₁₆)
Subscript s	Character		s		Characters	Character _s (Fontcode : 24AE ₁₆)
Subscript sun	Character		@		Characters	Character _@ (Fontcode : 229A ₁₆)
Subscript T	Character		T		Characters	Character _T (Fontcode : 24E3 ₁₆)
Subscript t	Character		t		Characters	Character _t (Fontcode : 24AF ₁₆)
Subscript U	Character		u		Characters	Character _u (Fontcode : 24E4 ₁₆)
Subscript u	Character		u		Characters	Character _u (Fontcode : 24B0 ₁₆)
Subscript V	Character		v		Characters	Character _v (Fontcode : 24E5 ₁₆)
Subscript v	Character		v		Characters	Character _v (Fontcode : 24B1 ₁₆)
Subscript W	Character		w		Characters	Character _w (Fontcode : 24E6 ₁₆)
Subscript w	Character		w		Characters	Character _w (Fontcode : 24B2 ₁₆)
Subscript X	Character		x		Characters	Character _x (Fontcode : 24E7 ₁₆)
Subscript x	Character		x		Characters	Character _x (Fontcode : 24B3 ₁₆)
Subscript Y	Character		y		Characters	Character _y (Fontcode : 24E8 ₁₆)
Subscript y	Character		y		Characters	Character _y (Fontcode : 24B4 ₁₆)
Subscript Z	Character		z		Characters	Character _z (Fontcode : 24E9 ₁₆)
Subscript z	Character		z		Characters	Character _z (Fontcode : 24B5 ₁₆)
Subset of	Character		c		Characters	Character _c (Fontcode : 2282 ₁₆)
Subtract	Function (dyadic)		-	-	Mathematics	Subtract X from Y ; Keyboard [-]
Subtract X from register	Function (monadic)		ST0-	ST0-	Stack	Subtract X from register or variable (Shortcut : [ST0] - [-] ; TAM : ST0- __ TamSto menu)
Sum (RPN)	Command		Σ_n	Σ_n	RPN Calculus and plotting	Sum using RPN program ; Σ_n (from Z to Y in steps of X) ; interrupt by [EXIT] -- see Formula_SIGMAN.png : https://47calc.com/doc/Images/Formula_SIGMAN.png (TAM : Σ_n __ TamLbOnly menu ; Info : <from> ENTER <to> ENTER <step> Σ_n ; displays Loop: n, current result, where n is iteration counter ; shown if flag MONIT is SET ; Ref : https://47calc.com/doc/Application%20Notes%20Notes/C47_JM_Programmed_Sums1.pdf)
Sum of interest	Command		ΣINT	ΣINT	Financial	Total interest paid across payments P1 through P2 , inclusive (TI : Σ of interest to P2 =)
Sum of principal	Command		ΣPRN	ΣPRN	Financial	Total principal paid across payments P1 through P2 , inclusive (TI : Σ of principal to P2 =)
Summation of $\ln^2 x$	Command		$\Sigma \ln^2 x$	$\Sigma \ln^2 x$	Summation	Summation of $\ln^2 x$ using statistics matrix (STATS)
Summation of $\ln^2 y$	Command		$\Sigma \ln^2 y$	$\Sigma \ln^2 y$	Summation	Summation of $\ln^2 y$ using statistics matrix (STATS)
Summation of $\ln x$	Command		$\Sigma \ln x$	$\Sigma \ln x$	Summation	Summation of $\ln x$ using statistics matrix (STATS)
Summation of $\ln x \cdot \ln y$	Command		$\Sigma \ln x \cdot \ln y$	$\Sigma \ln x \cdot \ln y$	Summation	Summation of $\ln x \cdot \ln y$ using statistics matrix (STATS)
Summation of $\ln y$	Command		$\Sigma \ln y$	$\Sigma \ln y$	Summation	Summation of $\ln y$ using statistics matrix (STATS)
Summation of x	Command		Σx	Σx	Summation	Summation of x using statistics matrix (STATS)
Summation of $x \cdot \ln y$	Command		$\Sigma x \cdot \ln y$	$\Sigma x \cdot \ln y$	Summation	Summation of $x \cdot \ln y$ using statistics matrix (STATS)
Summation of x^2	Command		Σx^2	Σx^2	Summation	Summation of x^2 using statistics matrix (STATS)
Summation of $x^2 \cdot \ln y$	Command		$\Sigma x^2 \cdot \ln y$	$\Sigma x^2 \cdot \ln y$	Summation	Summation of $x^2 \cdot \ln y$ using statistics matrix (STATS)
Summation of $x^2 y$	Command		$\Sigma x^2 y$	$\Sigma x^2 y$	Summation	Summation of $x^2 y$ using statistics matrix (STATS)
Summation of $x^2 y^{-1}$	Command		$\Sigma x^2 y^{-1}$	$\Sigma x^2 y^{-1}$	Summation	Summation of $x^2 y^{-1}$ using statistics matrix (STATS)
Summation of x^3	Command		Σx^3	Σx^3	Summation	Summation of x^3 using statistics matrix (STATS)
Summation of x^4	Command		Σx^4	Σx^4	Summation	Summation of x^4 using statistics matrix (STATS)
Summation of x^{-1}	Command		Σx^{-1}	Σx^{-1}	Summation	Summation of x^{-1} using statistics matrix (STATS)
Summation of $x^{-1} \cdot \ln y$	Command		$\Sigma x^{-1} \cdot \ln y$	$\Sigma x^{-1} \cdot \ln y$	Summation	Summation of $x^{-1} \cdot \ln y$ using statistics matrix (STATS)
Summation of x^{-2}	Command		Σx^{-2}	Σx^{-2}	Summation	Summation of x^{-2} using statistics matrix (STATS)
Summation of xy	Command		Σxy	Σxy	Summation	Summation of xy using statistics matrix (STATS)
Summation of xy^{-1}	Command		Σxy^{-1}	Σxy^{-1}	Summation	Summation of xy^{-1} using statistics matrix (STATS)
Summation of y	Command		Σy	Σy	Summation	Summation of y using statistics matrix (STATS)
Summation of $y \cdot \ln x$	Command		$\Sigma y \cdot \ln x$	$\Sigma y \cdot \ln x$	Summation	Summation of $y \cdot \ln x$ using statistics matrix (STATS)
Summation of y^2	Command		Σy^2	Σy^2	Summation	Summation of y^2 using statistics matrix (STATS)
Summation of y^{-1}	Command		Σy^{-1}	Σy^{-1}	Summation	Summation of y^{-1} using statistics matrix (STATS)
Summation of y^{-2}	Command		Σy^{-2}	Σy^{-2}	Summation	Summation of y^{-2} using statistics matrix (STATS)
Superscript	Alpha-shift		↑		Text input	Superscript (Shortcut : alpha g [▲])
Superscript -	Character		-		Characters	Character ⁻ (Fontcode : 21B8 ₁₆)
Superscript *	Character		*		Characters	Character [*] (Fontcode : 20BF ₁₆)
Superscript +	Character		+		Characters	Character ⁺ (Fontcode : 21BA ₁₆)
Superscript 0	Character		0		Characters	Character ⁰ (Fontcode : 21B0 ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Superscript 1	Character		1		Characters	Character ¹ (Fontcode : 2161 ₁₆)
Superscript 2	Character		2		Characters	Character ² (Fontcode : 2162 ₁₆)
Superscript 3	Character		3		Characters	Character ³ (Fontcode : 2163 ₁₆)
Superscript 4	Character		4		Characters	Character ⁴ (Fontcode : 2164 ₁₆)
Superscript 5	Character		5		Characters	Character ⁵ (Fontcode : 2165 ₁₆)
Superscript 6	Character		6		Characters	Character ⁶ (Fontcode : 2166 ₁₆)
Superscript 7	Character		7		Characters	Character ⁷ (Fontcode : 2167 ₁₆)
Superscript 8	Character		8		Characters	Character ⁸ (Fontcode : 2168 ₁₆)
Superscript 9	Character		9		Characters	Character ⁹ (Fontcode : 2169 ₁₆)
Superscript A	Character		A		Characters	Character ^A (Fontcode : 24B6 ₁₆)
Superscript a	Character		a		Characters	Character ^a (Fontcode : 24B2 ₁₆)
Superscript B	Character		B		Characters	Character ^B (Fontcode : 24B7 ₁₆)
Superscript b	Character		b		Characters	Character ^b (Fontcode : 24B3 ₁₆)
Superscript C	Character		C		Characters	Character ^C (Fontcode : 24B8 ₁₆)
Superscript c	Character		c		Characters	Character ^c (Fontcode : 24B4 ₁₆)
Superscript D	Character		D		Characters	Character ^D (Fontcode : 24B9 ₁₆)
Superscript d	Character		d		Characters	Character ^d (Fontcode : 24B5 ₁₆)
Superscript E	Character		E		Characters	Character ^E (Fontcode : 24BA ₁₆)
Superscript e	Character		e		Characters	Character ^e (Fontcode : 24B6 ₁₆)
Superscript F	Character		F		Characters	Character ^F (Fontcode : 24BB ₁₆)
Superscript f	Character		f		Characters	Character ^f (Fontcode : 24B7 ₁₆)
Superscript f	Character		f		Characters	Character ^f (Fontcode : 1DA0 ₁₆)
Superscript G	Character		G		Characters	Character ^G (Fontcode : 24BC ₁₆)
Superscript g	Character		g		Characters	Character ^g (Fontcode : 24B8 ₁₆)
Superscript g	Character		g		Characters	Character ^g (Fontcode : 1D4D ₁₆)
Superscript H	Character		H		Characters	Character ^H (Fontcode : 24BD ₁₆)
Superscript h	Character		h		Characters	Character ^h (Fontcode : 24B9 ₁₆)
Superscript h	Character		h		Characters	Character ^h (Fontcode : 02B0 ₁₆)
Superscript I	Character		I		Characters	Character ^I (Fontcode : 24BE ₁₆)
Superscript i	Character		i		Characters	Character ⁱ (Fontcode : 24BA ₁₆)
Superscript infinity	Character		∞		Characters	Character [∞] (Fontcode : 209E ₁₆)
Superscript J	Character		J		Characters	Character ^J (Fontcode : 24BF ₁₆)
Superscript j	Character		j		Characters	Character ^j (Fontcode : 24BB ₁₆)
Superscript K	Character		K		Characters	Character ^K (Fontcode : 24C0 ₁₆)
Superscript k	Character		k		Characters	Character ^k (Fontcode : 24BC ₁₆)
Superscript L	Character		L		Characters	Character ^L (Fontcode : 24C1 ₁₆)
Superscript l	Character		l		Characters	Character ^l (Fontcode : 24BD ₁₆)
Superscript M	Character		M		Characters	Character ^M (Fontcode : 24C2 ₁₆)
Superscript m	Character		m		Characters	Character ^m (Fontcode : 24BE ₁₆)
Superscript N	Character		N		Characters	Character ^N (Fontcode : 24C3 ₁₆)
Superscript n	Character		n		Characters	Character ⁿ (Fontcode : 24BF ₁₆)
Superscript O	Character		O		Characters	Character ^O (Fontcode : 24C4 ₁₆)
Superscript o	Character		o		Characters	Character ^o (Fontcode : 24B0 ₁₆)
Superscript P	Character		P		Characters	Character ^P (Fontcode : 24C5 ₁₆)
Superscript p	Character		p		Characters	Character ^p (Fontcode : 24B1 ₁₆)
Superscript pi	Character		π		Characters	Character ^π (Shortcut : alpha g [▲] π (alpha g [R+]) ; Fontcode : 2C65 ₁₆)
Superscript pi r	Character		π ^r		Characters	Character ^{π^r} (Fontcode : 2C66 ₁₆)
Superscript Q	Character		Q		Characters	Character ^Q (Fontcode : 24C6 ₁₆)
Superscript q	Character		q		Characters	Character ^q (Fontcode : 24B2 ₁₆)
Superscript R	Character		R		Characters	Character ^R (Fontcode : 24C7 ₁₆)
Superscript r	Character		r		Characters	Character ^r (Fontcode : 24B3 ₁₆)
Superscript r	Character		r		Characters	Character ^r (Fontcode : 02B3 ₁₆)
Superscript S	Character		S		Characters	Character ^S (Fontcode : 24C8 ₁₆)
Superscript s	Character		s		Characters	Character ^s (Fontcode : 24B4 ₁₆)
Superscript T	Character		T		Characters	Character ^T (Fontcode : 24C9 ₁₆)
Superscript t	Character		t		Characters	Character ^t (Fontcode : 24B5 ₁₆)
Superscript T	Character		T		Characters	Character ^T (Fontcode : 1D4D ₁₆)
Superscript U	Character		U		Characters	Character ^U (Fontcode : 24CA ₁₆)
Superscript u	Character		u		Characters	Character ^u (Fontcode : 24B6 ₁₆)
Superscript V	Character		V		Characters	Character ^V (Fontcode : 24CB ₁₆)
Superscript v	Character		v		Characters	Character ^v (Fontcode : 24B7 ₁₆)

FullName	Type	Default	Label	Catalog	Category	Extended description
Superscript W	Character		W		Characters	Character ^W (Fontcode : 24CC ₁₆)
Superscript w	Character		w		Characters	Character ^w (Fontcode : 2498 ₁₆)
Superscript X	Character		X		Characters	Character ^X (Fontcode : 24CD ₁₆)
Superscript x	Character		x		Characters	Character ^x (Fontcode : 2499 ₁₆)
Superscript x	Character		x		Characters	Character ^x (Fontcode : 02E3 ₁₆)
Superscript Y	Character		Y		Characters	Character ^Y (Fontcode : 24CE ₁₆)
Superscript y	Character		y		Characters	Character ^y (Fontcode : 249A ₁₆)
Superscript Z	Character		Z		Characters	Character ^Z (Fontcode : 24CF ₁₆)
Superscript z	Character		z		Characters	Character ^z (Fontcode : 249B ₁₆)
Surface integral	Character		∫		Characters	Character ∫ (Fontcode : 222F ₁₆)
survey ft _{US} to m	Function (monadic, linked)		survey ft _{US} →m		Distance conversions	Convert US survey foot to metre (TI : m)
Swap columns	Command		C↔C	M.C↔C	Matrix operations	Swap columns X and Y of indexed matrix
Swap n stack registers	Command		nSWAP	NSWAP	Stack	Swap bottom n stack registers with the n stack registers above (n = 1-4) (TAM : nSWAP _ TamNonReg menu)
Swap n stack registers	Command (old)		>nSWAP<		Stack	Old version of the command nSWAP that contained a bug when used in user programs (Info : May be found in older user programs and raises Error 56 -- Function has changed, please replace ; use nSWAP on [MULTSTK.1] fF5 instead)
Swap registers	Command (PEM)		R-SWAP	R-SWAP	Programming	Swap registers, using range number in X (sss.nndd means registers from sss through sss + n - 1 to registers ddd through ddd + nn - 1)
Swap rows	Command		R↔R	M.R↔R	Matrix operations	Swap rows X and Y of indexed matrix
Swap T	Command		t↔	t↔	Stack	Swap T and register (TAM : t↔ _ _ Tam menu)
Swap X	Command		x↔	x↔	Stack	Swap X and register (TAM : x↔ _ _ Tam menu)
Swap X	Command		X.SWAP	X.SWAP	Text input	Swap contents of X register with input of alpha buffer or equation editor
Swap X and Y	Command		x↔y	x↔y	Stack	Swap register X and register Y ; Keyboard [x↔y]
Swap X, Y, Z and T, A, B	Command		3SWAP	3SWAP	Stack	Swap X, Y, Z and T, A, B
Swap X, Y, Z, T and A, B, C, D	Command		4SWAP	4SWAP	Stack	Swap X, Y, Z, T and A, B, C, D (0 :)
Swap Y	Command		y↔	y↔	Stack	Swap Y and register (TAM : y↔ _ _ Tam menu)
Swap Z	Command		z↔	z↔	Stack	Swap Z and register (TAM : z↔ _ _ Tam menu)
Switch on	Command		<ON>		System	Switch on calculator (Shortcut : Switched OFF - [EXIT])
System flags	MENU (ASM)		[SYS.FL]	SYS.FL	Flags	Presented in menu TamFlag for commands accessing system flags (Info : Type characters 1-2 to search ; If SYS.FL is accessed from CAT.MENUS, soft buttons return flag status, otherwise toggle flag status ; Ref : https://47calc.com/doc/C47/Reference/C47_Flags_named.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_SYS-FL_page_1.pdf
sz	Character		β		Characters	Character β (Fontcode : 00DF ₁₆ ; Info : press [▼] for β at [qintL3] gF6)
sz	Character		β		Characters	Character β (Fontcode : 00DF ₁₆ ; Info : press [▲] for β at [qintL3] gF6)
T	Character		T		Characters	Character T (Fontcode : 0054 ₁₆) ; Keyboard alpha [4]
t	Character		t		Characters	Character t (Fontcode : 0074 ₁₆) ; Keyboard alpha f [4]
t apostrophe	Character		ť		Characters	Character ť (Fontcode : 0165 ₁₆)
T caron	Character		ť		Characters	Character ť (Fontcode : 0164 ₁₆)
T cedilla	Character		ṭ		Characters	Character ṭ (Fontcode : 0162 ₁₆ ; Info : press [▼] for ṭ at [qintL4] F1)
t cedilla	Character		ṭ		Characters	Character ṭ (Fontcode : 0163 ₁₆ ; Info : press [▲] for ṭ at [qintL4] F1)
t/mm ³ to kg/m ³	Function (monadic, linked)		t/mm ³ →kg/m ³		Density conversions	Convert metric tonne per cubic millimetre to kilogram per cubic metre (TI : kg/m ³ ;))
t/mm ³ to lbs/in ³	Function (monadic, linked)		t/mm ³ →lbs/in ³		Density conversions	Convert metric tonne per cubic millimetre to pound per cubic inch (TI : lbs/in ³ ;))
Tag as Cylindrical	Function (monadic)		→CYL	→CYL	Vector operations	Tag a 3D vector as having cylindrical coordinates (Shortcut : →P cycles through →SPH, then →CYL ; Info : display depends on flag 3Dxyz, for cylindrical vector : [r0;jk] [v ₁ v ₂ v ₃]°)
Tag as Spherical	Function (monadic)		→SPH	→SPH	Vector operations	Tag a 3D vector as having spherical coordinates, according to Physics or Math conventions (for spherical polar vectors) as set by flag 3DPHYS (default CLEAR) and indicated by the TI subscript of the spherical polar vector : p for Physics, m for Math (determines ordering of vector elements, works on whole stack) (Shortcut : →P cycles through →SPH, then →CYL ; Info : display depends on flag 3DPHYS, for spherical vector : [p0;φk]m [v ₁ v ₂ v ₃]°)

FullName	Type	Default	Label	Catalog	Category	Extended description
TAM (flag)	MENU (TAM)		[FLG]		Trailing input	Presented in menu TamFlag to quickly select lettered flags (Info : Shortcut {A} indicates character key A (in TAM), etcetera ; Ref : https://47calc.com/doc/C47/Reference/C47_Flags_p1.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_FLG_page_1.pdf
TAM (program)	MENU (TAM, ASM)		[PROG]	PROG	Trailing input	Presented in TAM menus for commands accessing global or local named labels (TAM : CAT.PROGS.* menu ; Info : Type characters 1-2 to search ; open menu PROG e.g. from button : on [TamLabel.1] F3 to activate menu TamLocalLabel, then menu PROG, to find local labels (if in scope)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_PROG_page_1.pdf
TAM (register)	MENU (TAM)		[REG]		Trailing input	Presented in TAM menus to quickly select lettered registers (Info : Shortcut {A} indicates character key A (in TAM), etcetera ; Ref : https://47calc.com/doc/C47/Reference/C47_Registers.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_REG_page_1.pdf
TAM mode	MENU (TAM)		[TamMenu]		Trailing input	Transient Alpha Mode is activated for trailing input (menu selection) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamMenu menu is typically activated by OPENM on [P.FN2.1] fF4) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamMenu_page_1.pdf
TAM mode (alpha)	MENU (TAM)		[TamAlpha]		Trailing input	Transient Alpha Mode is activated for trailing input (alpha) (Shortcut : Activated from TAM menus by α (f[XEQ]) or TAM [XEQ] ; Info : Alpha Input Mode is opened in UPPERCASE for labels, lowercase for variables ; menu CAT [ALPHA] is available on keyboard alpha f[+] ; alpha g-shift characters can also be reached from alpha longpress keyboard) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamAlpha_page_1.pdf
TAM mode (compare)	MENU (TAM)		[TamCmp]		Trailing input	Transient Alpha Mode is activated for trailing input (compare) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamCmp menu is typically activated by x= ? on [TEST.1] F3) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamCmp_page_1.pdf
TAM mode (DMX)	MENU (TAM)		[TamNonRegMax]		Trailing input	Transient Alpha Mode is activated for trailing input (DMX), allows selection of DMXmax (Info : Indirection ($\rightarrow$) activates TamIndirect ; TamNonRegMax menu is typically activated by DMX on [DISP.1] fF4) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamNonRegMax_page_1.pdf
TAM mode (flag)	MENU (TAM)		[TamFlag]		Trailing input	Transient Alpha Mode is activated for trailing input (flag) (Info : Indirection ($\rightarrow$) activates TamIndirect ; TamFlag menu is typically activated by SF on [FLAG.1] F1) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamFlag_page_1.pdf
TAM mode (general)	MENU (TAM)		[Tam]		Trailing input	Transient Alpha Mode is activated for trailing input (general) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; Tam menu is typically activated by VIEW on f[0]) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Tam_page_1.pdf
TAM mode (indirect)	MENU (TAM)		[TamIndirect]		Trailing input	Transient Alpha Mode is activated for trailing input (indirect) (Shortcut : Activated from TAM menus by Indirection ($\rightarrow$) ; α (f[XEQ]) or TAM [XEQ] activates TamAlpha) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamIndirect_page_1.pdf
TAM mode (KEY)	MENU (TAM)		[TamKey]		Trailing input	Transient Alpha Mode is activated for trailing input (KEYG, KEYX) (Info : TamKey menu is typically activated by) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamKey_page_1.pdf
TAM mode (label only)	MENU (TAM)		[TamLblOnly]		Trailing input	Transient Alpha Mode is activated for trailing input (label only) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamLblOnly menu is typically activated by PGMINT on [ADV.1] fF4) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamLblOnly_page_1.pdf
TAM mode (label)	MENU (TAM)		[TamLabel]		Trailing input	Transient Alpha Mode is activated for trailing input (label) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; Colon button (:) activates TamLocalLabel ; TamLabel menu is typically activated by LBL on g[LN] ; keyboard shortcuts {A}, {B}, {C}, {D}, {E}, {G}, {H}, {I}, {J}, {K}, {L} are available while menu TamLabel is open ([Σ+] = {A}, [1/x] = {B}, ..., [TAN] = {L})) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamLabel_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
TAM mode (local label)	MENU (TAM)		[TamLocalLabel]		Trailing input	Transient Alpha Mode is activated for trailing input (local label) (Shortcut : Activated from TAM menus by Colon button (:); alpha button (α) activates TamAlpha) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamLocalLabel_page_1.pdf
TAM mode (norm)	MENU (TAM)		[TamNorm]		Trailing input	Transient Alpha Mode is activated for trailing input (norm) (Info : Indirection ($\rightarrow$) activates TamIndirect ; TamNorm menu is typically activated by $\ x\ _p$ on [MATX.2] fF1) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamNorm_page_1.pdf
TAM mode (recall TVM)	MENU (TAM)		[TamRclTVM]		Trailing input	Transient Alpha Mode is activated for trailing input (recall TVM) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamRclTVM menu is typically activated by [RCL] when menu TVM, AMORT or CASHFL is open) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamRclTVM_page_1.pdf
TAM mode (recall)	MENU (TAM)		[TamRcl]		Trailing input	Transient Alpha Mode is activated for trailing input (recall) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamRcl menu is typically activated by [RCL]) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamRcl_page_1.pdf
TAM mode (shuffle)	MENU (TAM)		[TamShuffle]		Trailing input	Transient Alpha Mode is activated for trailing input (shuffle) (Info : TamShuffle menu is typically activated by Σ on [STK.1] fF6) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamShuffle_page_1.pdf
TAM mode (store TVM)	MENU (TAM)		[TamStoTVM]		Trailing input	Transient Alpha Mode is activated for trailing input (store TVM) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamStoTVM menu is typically activated by [STO] when menu TVM, AMORT or CASHFL is open) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamStoTVM_page_1.pdf
TAM mode (store)	MENU (TAM)		[TamSto]		Trailing input	Transient Alpha Mode is activated for trailing input (store) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamSto menu is typically activated by [STO]) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamSto_page_1.pdf
TAM mode (track)	MENU (TAM)		[TamNonRegTrk]		Trailing input	Transient Alpha Mode is activated for trailing input (two digit year and century tracking), allows setting YYtrack or YYoff (Info : Indirection ($\rightarrow$) activates TamIndirect ; TamNonRegTrk menu is typically activated by YY on [CLK.1] gF6) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamNonRegTrk_page_1.pdf
TAM mode (value)	MENU (TAM)		[TamNonReg]		Trailing input	Transient Alpha Mode is activated for trailing input (value) (Info : Indirection ($\rightarrow$) activates TamIndirect ; TamNonReg menu is typically activated by DSP on [Prefix.1] fF6) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamNonReg_page_1.pdf
TAM mode (variable only)	MENU (TAM)		[TamVarOnly]		Trailing input	Transient Alpha Mode is activated for trailing input (variable only) (Info : α (f[XEQ]) or TAM [XEQ] activates TamAlpha ; Indirection ($\rightarrow$) activates TamIndirect ; TamVarOnly menu is typically activated by MVAR on [P.FN2.1] F4) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TamVarOnly_page_1.pdf
Tangent	Function (monadic)		TAN	TAN	Trigonometry	Tangent ; Keyboard [TAN]
Tangent	Symbol		TAN		Trigonometry and characters	Tangent (Shortcut : alpha g[TAN] ("TAN"))
tau	Constant		τ		Constants	Constant # 83 τ c.circle = +6.283185307179586476925286766559006
TAU	Character		T		Characters	Character T (Fontcode : 03A4 ₁₆ ; Info : press [▼] for τ at [A...a.2] F4)
tau	Character		τ		Characters	Character τ (Fontcode : 03C4 ₁₆ ; Info : press [▲] for T at [A...a.2] F4)
tb _{sp_{UK}} to fl _{oz_{UK}}	Function (monadic, linked)		tb _{sp_{UK}} →fl _{oz_{UK}}		Volume conversions	Convert UK imperial tablespoon to UK fluid ounce (TI : fl _{oz_{UK}})
tb _{sp_{UK}} to mℓ	Function (monadic, linked)		tb _{sp_{UK}} →mℓ		Volume conversions	Convert UK imperial tablespoon to millilitre (TI : mℓ)
Tb _{sp_{US}} to fl _{oz_{US}}	Function (monadic, linked)		Tb _{sp_{US}} →fl _{oz_{US}}		Volume conversions	Convert US customary tablespoon to US fluid ounce (TI : fl _{oz_{US}})
Tb _{sp_{US}} to mℓ	Function (monadic, linked)		Tb _{sp_{US}} →mℓ		Volume conversions	Convert US customary tablespoon to millilitre (TI : mℓ)
Temperature conversions	MENU		[Temp:]	Temp:	Temperature conversions	Convert between units of temperature (Info : Flag CONV _{HP} may be SET for <to> $\leftrightarrow$ <to> unit conversion buttons ; CLEAR for <from> $\leftrightarrow$ <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Temp_page_1.pdf
Tenths of seconds	Setting (pgm)	ON	0.1s		Stopwatch	Show running time with tenths of seconds
Tera	Command (nonpgm)		-T		Numeric input	Factor 10 ¹²
Tera binary	Command (nonpgm)		-Ti		Numeric input	Factor 10 ⁴⁰

FullName	Type	Default	Label	Catalog	Category	Extended description
Testing	MENU		[TEST]	TEST	Programming	Testing functions ; Keyboard g[R/S] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TEST_page_1.pdf
Text string variables	MENU		[STRINGS]	STRINGS	Catalog	Auto-generated catalog of variables of the specified datatype : Text string (5) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_STRINGS_page_1.pdf
Text string?	Command (logical)		STRI?	STRI?	Programming	Test type of X is Text string (5) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
There does not exists	Character		∄		Characters	Character ∄ (Fontcode : 2204 ₁₆)
There exists	Character		∃		Characters	Character ∃ (Fontcode : 2203 ₁₆)
THETA	Character		Θ		Characters	Character Θ (Fontcode : 0398 ₁₆ ; Info : press [▼] for ∅ at [a...w.1]fF3)
theta-math	Character		θ		Characters	Character θ (Fontcode : 03B8 ₁₆)
theta-script	Character		ϑ		Characters	Character ϑ (Fontcode : 03D1 ₁₆ ; Info : press [▲] for ∅ at [A...Ω.1]fF3)
Ticks	Command (PEM)		TICKS	TICKS	Programming	Number of ticks counted since calculator was turned on (one tick is 100 ms)
Tilde	Character		~		Characters	Character ~ (Fontcode : 007E ₁₆)
Time	Command		Time→T	Time→T	Time functions	Current time
Time	Character		T		Characters	Character T (Fontcode : 2138 ₁₆)
Time display 24h	Flag	SET	TDM24		Display	SET for 24h time display ; CLEAR for 12h time display (Format : HH24:MM ; HH:MMam/pm ; Info : SBI is shown if flag SBtime is SET)
Time display format	Setting (pgm)	0	TDISP	TDISP ₀	Display	Set time display format : 0 = full ; 1,2 = hours/minutes ; 3 = hours/minutes/seconds ; 4,5,6 = 1,2,3 decimal places for the seconds (TAM : TDISP _ TamNonReg menu)
Time value of money	MENU		[TVM]	TVM	Financial	Time value of money functions (Info : When menu TVM is open, [RCL]/[STO] activates menu TamRclTVM/TamStoTVM ; TVM variable values are displayed as subscripts ; symbol ∞ is used for very small values ; symbol ∞ for very large values ; Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TVM_page_1.pdf
Time variables	MENU		[TIMES]	TIMES	Catalog	Auto-generated catalog of variables of the specified datatype : Time (3) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TIMES_page_1.pdf
Time?	Command (logical)		T?	T?	Programming	Test type of X is Time (3) (Ref : https://47calc.com/doc/C47/Reference/C47_Datatypes.pdf)
To integer	Function (monadic, cyclic)		→I	→I	Integers	Convert to Long integer (0), Short integer (8.02-8.16) (cyclic, max 1000 digits) (Info : Short integer indicated by subscript ₁₀ ; can show TI: Ovrfl<0: or Ovrfl>64 bits : which can be abbreviated as OF, indicating overflow condition) ; Keyboard f[Σ+]
To polar	Function (monadic, dyadic)		→P	→POLAR	Complex and coordinates	Transform rectangular to polar coordinates (dyadic, stack conventions according to flag RP _{HP} SET or CLEAR) ; transform Complex number or 2D/3D vector to polar notation (monadic) and set POLAR tag (TI : r = ; θ = (POLAR) ; Info : in Program Entry Mode, flag RP _{HP} determines whether →POL _{HP} or →POL _{CX} is stored ; for a 3D vector in X, function →POLAR (→P) cycles through →SPH, then →CYL ; vector display depends on flag 3Dxyz, for 2D polar vector : [rθ _i] [v ₁ v ₂] ^P ; 3D spherical vector : [ρθ _i φ _k] _M [v ₁ v ₂ v ₃] ^S ; 3D cylindrical vector : [rθ _i k] [v ₁ v ₂ v ₃] ^C ; Keyboard g[TAN]
To polar (CX)	Function (monadic, dyadic)		→POL _{CX}	→POL _{CX}	Complex and coordinates	Transform rectangular to polar coordinates (dyadic, stack conventions according to flag RP _{HP} CLEAR) ; transform Complex number or 2D/3D vector to polar notation (monadic) and set POLAR tag (TI : r = ; θ = (POLAR) ; Info : in Program Entry Mode, →POL _{CX} is stored when →POLAR is entered and flag RP _{HP} is CLEAR ; for a 3D vector in X, function →POL _{CX} cycles through →SPH, then →CYL ; vector display depends on flag 3Dxyz, for 2D polar vector : [rθ _i] [v ₁ v ₂] ^P ; 3D spherical vector : [ρθ _i φ _k] _M [v ₁ v ₂ v ₃] ^S ; 3D cylindrical vector : [rθ _i k] [v ₁ v ₂ v ₃] ^C)
To polar (HP)	Function (monadic, dyadic)		→POL _{HP}	→POL _{HP}	Complex and coordinates	Transform rectangular to polar coordinates (dyadic, stack conventions according to flag RP _{HP} SET) ; transform Complex number or 2D/3D vector to polar notation (monadic) and set POLAR tag (TI : r = ; θ = (POLAR) ; Info : in Program Entry Mode, →POL _{HP} is stored when →POLAR is entered and flag RP _{HP} is SET ; for a 3D vector in X, function →POL _{HP} cycles through →SPH, then →CYL ; vector display depends on flag 3Dxyz, for 2D polar vector : [rθ _i] [v ₁ v ₂] ^P ; 3D spherical vector : [ρθ _i φ _k] _M [v ₁ v ₂ v ₃] ^S ; 3D cylindrical vector : [rθ _i k] [v ₁ v ₂ v ₃] ^C)

FullName	Type	Default	Label	Catalog	Category	Extended description
To rectangular	Function (monadic, dyadic)		→R	→RECT	Complex and coordinates	Transform polar to rectangular coordinates (dyadic, stack conventions according to flag RPH SET or CLEAR) ; transform Complex number or 2D/3D vector to rectangular notation (monadic) and set RECT tag (TI : x : Re = ; y : Im = (RECT) ; Info : in Program Entry Mode, flag RPH determines whether →RECT _{HP} or →RECT _{CX} is stored ; vector display depends on flag 3Dxyz, for 2D rectangular vector : [ij] [v ₁ v ₂] ; 3D rectangular vector : [ijk] [v ₁ v ₂ v ₃] ; Keyboard g[COS]
To rectangular (CX)	Function (monadic, dyadic)		→RECT _{CX}	→RECT _{CX}	Complex and coordinates	Transform polar to rectangular coordinates (dyadic, stack conventions according to flag RPH CLEAR) ; transform Complex number or 2D/3D vector to rectangular notation (monadic) and set RECT tag (TI : x : Re = ; y : Im = (RECT) ; Info : in Program Entry Mode, →RECT _{CX} is stored when →RECT is entered and flag RPH is CLEAR ; vector display depends on flag 3Dxyz, for 2D rectangular vector : [ij] [v ₁ v ₂] ; 3D rectangular vector : [ijk] [v ₁ v ₂ v ₃])
To rectangular (HP)	Function (monadic, dyadic)		→RECT _{HP}	→RECT _{HP}	Complex and coordinates	Transform polar to rectangular coordinates (dyadic, stack conventions according to flag RPH SET) ; transform Complex number or 2D/3D vector to rectangular notation (monadic) and set RECT tag (TI : x : Re = ; y : Im = (RECT) ; Info : in Program Entry Mode, →RECT _{HP} is stored when →RECT is entered and flag RPH is SET ; vector display depends on flag 3Dxyz, for 2D rectangular vector : [ij] [v ₁ v ₂] ; 3D rectangular vector : [ijk] [v ₁ v ₂ v ₃])
Tone	Command		TONE	TONE	Input-Output	Tone (range 0-9) (TAM : TONE = TamNonReg menu)
tonne to kg	Function (monadic, linked)		tonne→kg		Mass conversions	Convert metric tonne to kilogram (TI : kg)
Top?	Command (logical)		TOP?	TOP?	Programming	Test program pointer is in top routine (as opposed to in subroutine)
torr to Pa	Function (monadic, linked)		torr→Pa		Pressure conversions	Convert torr to Pascal (TI : Pa)
tr oz to g	Function (monadic, linked)		tr oz→g		Mass conversions	Convert troy ounce to gram (TI : g)
Transpose matrix	Function (monadic)		[M] ^T	[M] ^T	Matrix operations	Transpose matrix in X
Transpose matrix	Function (monadic, legacy)		>TRANS		Matrix operations	Legacy version of function [M] ^T ; Transpose matrix in X (Info : Function >TRANS is superseded by [M] ^T on [MATX]F2)
Transposed	Character		T		Characters	Character T (Fontcode : 22A416)
TRiangle4	User Program		TRiangle4		Test programs	TRiangle4 example program, available to load from PROGRAMS/TRiangle4.p47, using READP -- see https://forum.swissmicros.com/viewtopic.php?p=38646#p38646 (Info : Triangle program, original p58 42S Programming manual, ported by Bruce Young, Didier Lachieze, Barry Mead)
Trigonometry	MENU		[TRG]	TRG	Trigonometry	Trigonometry functions (Info : TRG replaces R47 menu TRG_R47 ; Ref : https://47calc.com/doc/C47/Reference/C47_DMS-HMS.pdf) ; Keyboard g[+/-] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TRG_page_1.pdf
Trigonometry	MENU		[TRG_R47]	TRG_R47	Trigonometry	Trigonometry functions (Info : R47 menu TRG_R47 is replaced by TRG ; Ref : https://47calc.com/doc/C47/Reference/C47_DMS-HMS.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_TRG_R47_page_1.pdf
Triple I = V ÷ Z	Function (triadic)		I=V÷Z	I=V÷Z	Electrical engineering	X = R90 / R96 ; Y = R91 / R97 ; Z = R92 / R98
Triple integral	Character		∫		Characters	Character ∫ (Fontcode : 222D16)
Triple V = I × Z	Function (triadic)		V=I×Z	V=I×Z	Electrical engineering	X = R93 × R96 ; Y = R94 × R97 ; Z = R95 × R98
Triple Z = V ÷ I	Function (triadic)		Z=V÷I	Z=V÷I	Electrical engineering	X = R90 / R93 ; Y = R91 / R94 ; Z = R92 / R95
TRivip13	User Program		TRivip13		Test programs	TRivip13 example program, available to load from PROGRAMS/TRivip13.p47, using READP -- see https://forum.swissmicros.com/viewtopic.php?p=38746#p38746 (Info : Triangle program, re-imagined by Mike L)
tsp _{UK} to floz _{UK}	Function (monadic, linked)		tsp _{UK} →floz _{UK}		Volume conversions	Convert UK imperial teaspoon to UK fluid ounce (TI : floz _{UK})
tsp _{UK} to mL	Function (monadic, linked)		tsp _{UK} →mL		Volume conversions	Convert UK imperial teaspoon to millilitre (TI : mL)
tsp _{US} to floz _{US}	Function (monadic, linked)		tsp _{US} →floz _{US}		Volume conversions	Convert US customary teaspoon to US fluid ounce (TI : floz _{US})
tsp _{US} to mL	Function (monadic, linked)		tsp _{US} →mL		Volume conversions	Convert US customary teaspoon to millilitre (TI : mL)
tstData	User Program		tstData		Test programs	tstData program to store example data in registers 10-38, available to load from PROGRAMS/tstData.p47, using READP
TT	User Program		TT		Test programs	TT Time value of money program, available to load from PROGRAMS/tvm/TT.p47, using READP (Ref : https://47calc.com/doc/Application%20Notes/AN0012_C47_R47_JM_TVM.pdf)

FullName	Type	Default	Label	Catalog	Category	Extended description
TVM amortisation	MENU		[AMORT]	AMORT	Financial	TVM amortisation (Info : When menu AMORT is open, [RCL]/[STO] activates menu TamRclTVM/TamStoTVM ; Ref : https://47calc.com/doc/Application%20Notes%20Notes/C47_R47_JM_TVM.pdf) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_AMORT_page_1.pdf
TVM annual interest rate	Variable (real)	0	I/a	I%/a	Financial	Reserved Real variable for the TVM annual interest rate as percentage (I/a) ; use 10 for 10%, not 0.1 ; displays as I _a or I in menu TVM when value is large (TI : I%/a = I%YR = APR =)
TVM annual interest rate	EasyAccess (TAM)	0	I/a		Trailing input	Easy access to variable I%/a to recall TVM annual interest rate (RCL 'I%/a') (TI : 'I%/a' :)
TVM annual interest rate	EasyAccess (TAM)	0	I/a		Trailing input	Easy access to variable I%/a to store TVM annual interest rate (STO 'I%/a') (TI : 'I%/a' :)
TVM begin payments	Setting (pgm)	OFF	Begin	BeginP 0	Financial	Switch on TVM begin payments (Info : SBI END ; BEG is shown if flag SBTvm is SET and menu TVM, AMORT or CASHFL is open)
TVM cash flow	MENU (strike)		[CASHFL]	CASHFL	Financial	TVM cash flow (Info : When menu CASHFL is open, [RCL]/[STO] activates menu TamRclTVM/TamStoTVM) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CASHFL_page_1.pdf
TVM compounding periods	Variable (real)	12	cp/a	CPER/a	Financial	Reserved Real variable for the TVM compounding periods per annum (cp/a) ; displays as c _a or c in menu TVM when value ≠ 0 (TI : CPER/a = Compounding periods p.a. =)
TVM compounding periods	EasyAccess (TAM)	12	cp/a		Trailing input	Easy access to variable CPER/a to recall TVM compounding periods (RCL 'CPER/a') (TI : 'CPER/a' :)
TVM compounding periods	EasyAccess (TAM)	12	cp/a		Trailing input	Easy access to variable CPER/a to store TVM compounding periods (STO 'CPER/a') (TI : 'CPER/a' :)
TVM end payments	Setting (pgm)	ON	End	ENDP 0	Financial	Switch on TVM end payments (Info : SBI END ; BEG is shown if flag SBTvm is SET and menu TVM, AMORT or CASHFL is open)
TVM end payments	Flag (system)	SET	ENDPMT		Financial	SET for TVM end payments ; CLEAR for TVM begin payments (Info : SBI END ; BEG is shown if flag SBTvm is SET)
TVM future value	Variable (real)	0	FV	FV	Financial	Reserved Real variable for the TVM future value (FV) ; displays as F in menu TVM when value is large (TI : FV = Future Value =)
TVM future value	EasyAccess (TAM)	0	FV		Trailing input	Easy access to variable FV to recall TVM future value (RCL 'FV') (TI : 'FV' :)
TVM future value	EasyAccess (TAM)	0	FV		Trailing input	Easy access to variable FV to store TVM future value (STO 'FV') (TI : 'FV' :)
TVM number of payments	Variable (real)	0	n	NPPER	Financial	Reserved Real variable for the TVM number of payments (n) (TI : NPPER = n pay periods =)
TVM number of payments	EasyAccess (TAM)	0	n		Trailing input	Easy access to variable NPPER to recall TVM number of payments (RCL 'NPPER') (TI : 'NPPER' :)
TVM number of payments	EasyAccess (TAM)	0	n		Trailing input	Easy access to variable NPPER to store TVM number of payments (STO 'NPPER') (TI : 'NPPER' :)
TVM payment	Variable (real)	0	PMT	PMT	Financial	Reserved Real variable for the TVM payment (PMT) ; displays as P _m or P in menu TVM when value is large (TI : PMT = Payment =)
TVM payment	EasyAccess (TAM)	0	PMT		Trailing input	Easy access to variable PMT to recall TVM payment (RCL 'PMT') (TI : 'PMT' :)
TVM payment	EasyAccess (TAM)	0	PMT		Trailing input	Easy access to variable PMT to store TVM payment (STO 'PMT') (TI : 'PMT' :)
TVM payment period	Variable (real)	12	pp/a	PPER/a	Financial	Reserved Real variable for the TVM payment period per annum (pp/a) ; displays as p _a or p in menu TVM when value ≠ 0 (TI : PPER/a = Pay periods p.a. =)
TVM payment period	EasyAccess (TAM)	12	pp/a		Trailing input	Easy access to variable PPER/a to recall TVM payment period (RCL 'PPER/a') (TI : 'PPER/a' :)
TVM payment period	EasyAccess (TAM)	12	pp/a		Trailing input	Easy access to variable PPER/a to store TVM payment period (STO 'PPER/a') (TI : 'PPER/a' :)
TVM present value	Variable (real)	0	PV	PV	Financial	Reserved Real variable for the TVM present value (PV) ; displays as P _v or P in menu TVM when value is large (TI : PV = Present Value =)
TVM present value	EasyAccess (TAM)	0	PV		Trailing input	Easy access to variable PV to recall TVM present value (RCL 'PV') (TI : 'PV' :)
TVM present value	EasyAccess (TAM)	0	PV		Trailing input	Easy access to variable PV to store TVM present value (STO 'PV') (TI : 'PV' :)
Two digit year limit	Setting (pgm)	0	YY	YY ₀	Time functions	Set the limit <ccyy> for two digit year conversion in function .d (in NIM only), up to which the specified (tracked) century <cc> is implied and above which the prior century <cc-1> is used (TAM : YY ____ TamNonRegTrk menu ; Info : Displayed with subscript <ccyy> as YY _{ccyy})
Two digit year limit	Setting (pgm, old)	0	>YY<		Time functions	Old version of the setting YY that could not use indirect addressing (Info : May be found in older user programs, use YY on [CLK.1]gF6 instead)

FullName	Type	Default	Label	Catalog	Category	Extended description
Two digit year off	Command		YYoff	YYoff	Time functions	Switch off two digit year conversion in function .d (Info : Displayed in button for YY with subscript "off" as YY _{off})
Two digit year tracking	Command		YYtrack	YYtrack	Time functions	Switch on two digit year conversion tracking to imply the latest century <cc> used in function .d and set the limit for YY to <cc99> to use the full range of years (Info : Displayed in button for .d ; YY with subscript "T" as .d ; YY _{cc99} t)
U	Character		U		Characters	Character U (Fontcode : 0055 ₁₆) ; Keyboard alpha [5]
u	Character		u		Characters	Character u (Fontcode : 0075 ₁₆) ; Keyboard alpha f [5]
u accute	Character		ú		Characters	Character Ů (Fontcode : 00DA ₁₆ ; Info : press [▼] for Ů at [aintl.4] F4)
u accute	Character		û		Characters	Character ů (Fontcode : 00FA ₁₆ ; Info : press [▲] for ů at [aintl.4] F4)
U breve	Character		Ů		Characters	Character Ů (Fontcode : 016C ₁₆ ; Info : press [▼] for Ů at [aintl.4] fF3)
u breve	Character		ů		Characters	Character ů (Fontcode : 016D ₁₆ ; Info : press [▲] for ů at [aintl.4] fF3)
U circumflex	Character		Ű		Characters	Character Ű (Fontcode : 00DB ₁₆ ; Info : press [▼] for Ű at [aintl.4] F5)
u circumflex	Character		ű		Characters	Character ű (Fontcode : 00FB ₁₆ ; Info : press [▲] for ű at [aintl.4] F5)
u circumflex	Character		ű		Characters	Character ű (Fontcode : 03A2 ₁₆)
U diaeresis	Character		Ü		Characters	Character Ü (Fontcode : 00DC ₁₆ ; Info : press [▼] for Ü at [aintl.4] F6)
u diaeresis	Character		ü		Characters	Character ü (Fontcode : 00FC ₁₆ ; Info : press [▲] for ü at [aintl.4] F6)
U grave	Character		Ù		Characters	Character Ù (Fontcode : 00D9 ₁₆ ; Info : press [▼] for Ù at [aintl.4] F3)
u grave	Character		ù		Characters	Character ù (Fontcode : 00F9 ₁₆ ; Info : press [▲] for ù at [aintl.4] F3)
U macron	Character		Ū		Characters	Character Ū (Fontcode : 016A ₁₆ ; Info : press [▼] for Ū at [aintl.4] fF2)
u macron	Character		ū		Characters	Character ū (Fontcode : 016B ₁₆ ; Info : press [▲] for ū at [aintl.4] fF2)
u macron	Character		ū		Characters	Character ū (Fontcode : 0380 ₁₆)
U ogonek	Character		Ų		Characters	Character Ų (Fontcode : 0172 ₁₆ ; Info : press [▼] for Ų at [aintl.4] fF5)
u ogonek	Character		ų		Characters	Character ų (Fontcode : 0173 ₁₆ ; Info : press [▲] for ų at [aintl.4] fF5)
U ring	Character		Ů		Characters	Character Ů (Fontcode : 016E ₁₆ ; Info : press [▼] for Ů at [aintl.4] fF4)
u ring	Character		ů		Characters	Character ů (Fontcode : 016F ₁₆ ; Info : press [▲] for ů at [aintl.4] fF4)
U tilde	Character		Ŭ		Characters	Character Ŭ (Fontcode : 0168 ₁₆ ; Info : press [▼] for Ŭ at [aintl.4] fF1)
u tilde	Character		ū		Characters	Character ŭ (Fontcode : 0169 ₁₆ ; Info : press [▲] for ŭ at [aintl.4] fF1)
UK	Character		UK		Characters	Character UK (Fontcode : 242D ₁₆)
UK formatting	Setting (pgm)	OFF	UK	S.UK ◊	Display	Set to UK regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 14.09.1752 ; Week of Year rule set: Monday.Thursday)
Underscore	Character		_		Characters	Character _ (Fontcode : 005F ₁₆) ; Keyboard alpha [-]
Undo	Command (nonpgm)		↶	UNDO	Stack	Restore complete stack, LASTx, STATS and system flags (Info : Error 128 -- Undo failed: likely no memory -- may be raised) ; Keyboard f[←]
Undo	Character		↶		Characters	Character ↶ (Fontcode : 238C ₁₆)
Uniform cdf (lower)	Function (monadic)		Unfm _L	Unfm _L	Probability (real)	Uniform cumulative distribution (lower tail)
Uniform cdf (upper)	Function (monadic)		Unfm _U	Unfm _U	Probability (real)	Uniform cumulative distribution (upper tail)
Uniform distribution	MENU		[Uniform:]	Uniform:	Probability (real)	Uniform probability distribution (continuous) (TI : RegM = a = ; RegN = b =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Uniform_page_1.pdf
Uniform pdf	Function (monadic)		Unfm _P	Unfm _P	Probability (real)	Uniform probability density function
Uniform qf (inverse)	Function (monadic)		Unfm ⁻¹	Unfm ⁻¹	Probability (real)	Uniform inverse cumulative distribution (quantile)
Union	Character		∪		Characters	Character ∪ (Fontcode : 222A ₁₆)
Unit (prefix) notation	Setting (pgm)	OFF	UNIT	UNIT O	Display	Set numeric display mode to unit (prefix) notation with nn+1 digits (NDEC = nn = 0-19 ; DF = 5) ; showing all or limited set of SI-prefixes depending on flag PFX.All ; if flag 1024 ⁿ is SET, binary prefixes are shown if available and long integer values are indicated by Z: ; prefixes can be selected directly from menu Prefix (TAM : UNIT __ TamNonReg menu ; Info : this setting applies to Real numbers and Complex numbers)
Unit conversions	MENU		[CONV]	CONV	Unit conversions	Unit conversions (Info : Flag CONV _{HP} may be SET for <to> ↔ <to> unit conversion buttons ; CLEAR for <from> →↵ <from> unit conversion buttons (default SET) ; Ref : https://47calc.com/doc/Application%20Notes/AN0024_C47_R47_JM_Assigning_custom_conversion_pairs.pdf) ; Keyboard f[5] Docs: https://47calc.com/doc/C47/Menus/C47_Menu_CONV_page_1.pdf
Unit in the last place	Function (monadic)	10 ⁻⁶¹⁷⁶	ULP	ULP	Mathematics	Get minimum difference to next or previous machine representable real, as power of ten (Info : ULP is for Real numbers in X ; result is displayed as ≈0. because of default HIDE and RNG settings, use SHOW to view result)
Unit vector [0 0 1]	Command		→ ₃ [001]	→ ₃ [001]	Vector operations	Create a new 3D unit vector with elements [0 0 1] (Info : Display depends on flag 3Dxyz, for rectangular vector : [ijk] [v ₁ v ₂ v ₃])

FullName	Type	Default	Label	Catalog	Category	Extended description
Unit vector [0 1 0]	Command		$\vec{v}_3[010]$	$\vec{v}_3[010]$	Vector operations	Create a new 3D unit vector with elements [0 1 0] (Info : Display depends on flag 3Dxyz, for rectangular vector : [ijk] [v ₁ v ₂ v ₃])
Unit vector [0 1]	Command		$\vec{v}_2[01]$	$\vec{v}_2[01]$	Vector operations	Create a new 2D unit vector with elements [0 1] (Info : Display depends on flag 3Dxyz, for rectangular vector : [ij] [v ₁ v ₂])
Unit vector [1 0 0]	Command		$\vec{v}_3[100]$	$\vec{v}_3[100]$	Vector operations	Create a new 3D unit vector with elements [1 0 0] (Info : Display depends on flag 3Dxyz, for rectangular vector : [ijk] [v ₁ v ₂ v ₃])
Unit vector [1 0]	Command		$\vec{v}_2[10]$	$\vec{v}_2[10]$	Vector operations	Create a new 2D unit vector with elements [1 0] (Info : Display depends on flag 3Dxyz, for rectangular vector : [ij] [v ₁ v ₂])
Unit vector or matrix	Command		UNITV	UNITV	Complex numbers	Unit vector or matrix for Real or Complex matrix or vector ; the result will have Euclidean magnitude 1 (Info : UNITV also applies to Complex numbers)
Unsigned	Setting (pgm)	OFF	UNSIGN	UNSIGN 0	Bits and bytes	Set unsigned mode for Short integer (ISM = 0) (Info : <w> in SBI indicates word size (menu BITSET) ; SBI <w>:u is shown if flag SBint is SET)
Unsigned 16 bits	Setting (pgm)	OFF	16:u		Number bases	Shortcut to set word size to 16 bits unsigned (ISM = 0) -- Unsigned (Info : SBI 16:u is shown if flag SBint is SET)
Unsigned 32 bits	Setting (pgm)	OFF	32:u		Number bases	Shortcut to set word size to 32 bits unsigned (ISM = 0) -- Unsigned (Info : SBI 32:u is shown if flag SBint is SET)
Unsigned 64 bits	Setting (pgm)	OFF	64:u		Number bases	Shortcut to set word size to 64 bits unsigned (ISM = 0) -- Unsigned (Info : SBI 64:u is shown if flag SBint is SET)
Unsigned 8 bits	Setting (pgm)	OFF	8:u		Number bases	Shortcut to set word size to 8 bits unsigned (ISM = 0) -- Unsigned (Info : SBI 8:u is shown if flag SBint is SET)
Unzip	Function (monadic)		UNZIP	UNZIP	Bits and bytes	De-interleave (unzip) bits of X into Y and X _i using most significant bit for Y
Up	Command		↑		Navigation	Scroll up for menus and browser screens or backstep through program steps (Info : To assign ↑ to a key or button, use ASN (f[1]) and spell the name as 'Up' ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard [▲]
Up arrow	Character		↑		Characters	Character ↑ (Fontcode : 21E1 ₁₆)
Up block arrow	Character		⬆		Characters	Character ⬆ (Fontcode : 2B61 ₁₆)
Up down arrow	Character		↕		Characters	Character ↕ (Fontcode : 2195 ₁₆)
Up hollow arrow	Character		↗		Characters	Character ↗ (Fontcode : 21E7 ₁₆)
Upper estimate for solver	Variable (real)	0	↑Est	↑EST	Solver	Reserved Real variable for the upper estimate for solver (↑Est) ; displays as ↑E in menu ToolS for larger values ; set interactively from menu ToolS and set by realSlv _y [*] or cpxSlv _y [*] (Split screen : Displaying ↑Est Upper = ; ↓Est Lower =)
Upper incomplete Gamma function	Function (dyadic)		Γ _{xy}	Γ _{xy}	Mathematics	Upper incomplete Gamma function -- see https://en.wikipedia.org/wiki/Incomplete_gamma_function
Upper limit for integrator	Variable (real)	0	↑Lim	↑Lim	Integrator	Reserved Real variable for the upper limit for integrator (↑Lim) ; displays as ↑L in menu ToolJ for larger values ; set interactively from menu ToolJ and set by ∫ _y ^x (TI : ↑ Upper limit :)
Upper limit for X-axis	Variable (real)	10	↑X	↑X	Plotting	Reserved Real variable for the upper limit for X-axis (↑X) ; set interactively from menu Graphs and set by Draw _y ^x (TI : '↑X' :)
Upper limit for Y-axis	Variable (real)	10	↑Y	↑Y	Plotting	Reserved Real variable for the upper limit for Y-axis (↑Y) ; set interactively from menu Graphs and set by Plot functions (TI : '↑Y' :)
Upper quartile	Command		xQ3	xQ3	Summary statistics	Upper quartile for both X and Y -- see https://en.wikipedia.org/wiki/Quartile#Method_1 (TI : Q ₃ x = ; Q ₃ y =)
Upper regularised incomplete Gamma function	Function (dyadic)		IF _q	IF _q	Mathematics	Upper regularised incomplete Gamma function (Q) -- see https://mathworld.wolfram.com/RegularizedGammaFunction.html
UPSILON	Character		Y		Characters	Character Y (Fontcode : 03A5 ₁₆ ; Info : press [▼] for u at [α...ω.2]F5)
upsilon	Character		u		Characters	Character u (Fontcode : 03C5 ₁₆ ; Info : press [▲] for Y at [A...Ω.2]F5)
UPSILON dialytika	Character		Ÿ		Characters	Character Ÿ (Fontcode : 03AB ₁₆ ; Info : press [▼] for ü at [α...ω.3]F4)
upsilon dialytika	Character		ü		Characters	Character ü (Fontcode : 03CB ₁₆ ; Info : press [▲] for Ÿ at [A...Ω.3]F4)
upsilon dialytika tonos	Character		Û		Characters	Character Û (Fontcode : 03B0 ₁₆)
upsilon tonos	Character		ú		Characters	Character ú (Fontcode : 03CD ₁₆)
US	Character		us		Characters	Character us (Fontcode : 242E ₁₆)
US or UK units	Flag	CLEAR	CONV _{us}		Unit conversions	SET for US unit preference ; CLEAR for UK unit preference
US Week of Year rule	Setting (pgm)	OFF	WOY _{us}	WOY _{us}	Time functions	Set Week of Year rule to US ; week starts on Sunday and week number depends on the first Saturday ; returns 7.5 (TI : Week of Year rule set: Sunday.Saturday ; Info : SBI Ww#-d# is shown if flag SBwoy is SET)
USA formatting	Setting (pgm)	OFF	USA	S.USA ◇	Display	Set to USA regional formats (date, time, calendar, number formatting) (TI : First Gregorian day set: 09/14/1752 ; Week of Year rule set: Sunday.Saturday)

FullName	Type	Default	Label	Catalog	Category	Extended description
USB Power	Flag (system)	CLEAR	USB		System	SET for calculator running on USB power; CLEAR for calculator running on battery power
USB symbol	Character		Ψ		Characters	Character Ψ (Fontcode : 2434 ₁₆)
User mode	Character		$\mathbb{U}$		Characters	Character $\mathbb{U}$ (Fontcode : 242C ₁₆)
USER mode	Setting	OFF	USER		Customisation	Switch on USER mode ; not programmable - in PEM, use flag USER (Info : To assign USER to a key or button, use ASN (f[1]) and spell the name as 'USER' ; during assignment, pressing USER (f[2]) opens MyMenu ; Ref : https://47calc.com/doc/C47/Reference/C47_Assignment.pdf) ; Keyboard f[2]
USER mode	Flag	CLEAR	USER		Customisation	SET for USER mode; CLEAR for Normal Mode
V	Character		V		Characters	Character V (Fontcode : 0056 ₁₆) ; Keyboard alpha [6]
v	Character		v		Characters	Character v (Fontcode : 0076 ₁₆) ; Keyboard alpha f[6]
v circumflex	Character		$\hat{v}$		Characters	Character $\hat{v}$ (Fontcode : 038B ₁₆)
v macron	Character		$\bar{v}$		Characters	Character $\bar{v}$ (Fontcode : 0381 ₁₆)
Vacuum electric permittivity	Constant		ϵ_0		Constants	Constant # 61 ϵ_0 epermt.vac = +8.8541878188 × 10 ⁻¹² (Unit : As/Vm)
Vacuum magnetic permeability	Constant		μ_0		Constants	Constant # 65 μ_0 mpermb.vac = +1.25663706127 × 10 ⁻⁶ (Unit : Vs/Am)
VAR	MENU (ASM)		[VAR]	VAR	Trailing input	Presented in TAM menus for commands accessing variables (TAM : CAT.VARS.+ menu ; Info : Type characters 1-2 to search ; Matrix variables STATS and HISTO are also included in this menu, if created) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_VAR_page_1.pdf
Variable ...	Variable (user)		<var...>		Equations	Next variable(s) if any, of the expression entered in EQ.NEW (Info : After a value has been entered, the variable name is starred (<var...>*) to indicate it is selected for a subsequent operation)
Variable ...	Variable (user)		<var...>		Equations	Next variable(s) if any, as created by MVAR (in RPN program) (Info : After a value has been entered, the variable name is starred (<var...>*) to indicate it is selected for a subsequent operation)
Variable 1	Variable (user)		<var ₁ >		Equations	Variable 1 of the expression entered in EQ.NEW (Info : After a value has been entered, the variable name is starred (<var ₁ >*) to indicate it is selected for a subsequent operation)
Variable 1	Variable (user)		<var ₁ >		Equations	Variable 1 as created by MVAR (in RPN program) (Info : After a value has been entered, the variable name is starred (<var ₁ >*) to indicate it is selected for a subsequent operation)
Variable 2	Variable (user)		<var ₂ >*		Equations	Variable 2 of the expression entered in EQ.NEW (starred) (Info : The variable name is starred (<var ₂ >*) after a value has been entered, to indicate it is selected for a subsequent operation)
Variable 2	Variable (user)		<var ₂ >*		Equations	Variable 2 as created by MVAR (in RPN program) (starred) (Info : The variable name is starred (<var ₂ >*) after a value has been entered, to indicate it is selected for a subsequent operation)
Variable menu	Command (PEM)		VarMNU	VARMNU	Programming	Create variable menu ; uses register K to store variable name when MVAR-defined button (<var...>) is pressed without NIM input (TAM : VarMNU __ TamLbOnly menu ; Error 25 -- No MVAR found in selected program -- may be raised)
Variable menu (42)	Command (42, PEM)		42VRMNU	42VRMNU	Compatibility	Create variable menu ; uses Alpha register (default K) to store variable name when MVAR-defined button (<var...>) is pressed without NIM input (TAM : 42VRMNU __ TamLbOnly menu ; Error 25 -- No MVAR found in selected program -- may be raised)
Variable menu displayed	Flag (system)	CLEAR	VMDISP		Programming	SET for variable menu displayed; CLEAR for variable menu not displayed
Variable x	Symbol		x		Equations	Variable x
Variables	MENU		[VARS]	VARS	Catalog	Auto-generated variable catalogs Docs: https://47calc.com/doc/C47/Menus/C47_Menu_VARS_page_1.pdf
Vector angle	Function (dyadic)		$\angle \vec{x}, \vec{y}$	$\angle \vec{x}, \vec{y}$	Matrix operations	Angle between the 2D or 3D vectors in X and Y
Vector conversions	MENU		$[\vec{v} \leftrightarrow \bar{v}]$	$\vec{v} \leftrightarrow \bar{v}$	Vector operations	Vector conversion functions (Ref : https://47calc.com/doc/C47/Reference/C47_Vector_display.pdf) ; Info : Vectors are stored internally as rectangular and calculation results are presented in rectangular format ; to edit a vector, first put it in rectangular format ; vector TI's are shown for values in X only and a small font may be used ; vector TI's are minimised if the stack changes or [EXIT] is pressed (only ijk or r8k or p8k is shown, without subscripts or brackets)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_VectorConv_page_1.pdf

FullName	Type	Default	Label	Catalog	Category	Extended description
Vector menu	MENU		[VECTOR]	VECTOR	Vector operations	Vector functions (Ref : https://47calc.com/doc/C47/Reference/C47_Vector_display.pdf ; Info : Vectors are stored internally as rectangular and calculation results are presented in rectangular format ; to edit a vector, first put it in rectangular format ; vector TI's are shown for values in X only and a small font may be used ; vector TI's are minimised if the stack changes or [EXIT] is pressed (only ijk or r0k or p0k is shown, without subscripts or brackets)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_VECTOR_page_1.pdf
Version	Command (nonpgm)		VERS	VERS	System	Show firmware version (TI : Firmware version)
View	Command		VIEW	VIEW	Status	View register or variable (with preceding TI) (TAM : VIEW __ Tam menu ; Info : if $\square$ ACT is SET, VIEW will print when executed from the keyboard in MAN, NORM or TRACE ; in Program Entry Mode, $\square$ EN must be SET as well ; if $\square$ ACT is CLEAR and $\square$ EN is SET, VIEW halts execution (R/S)) ; Keyboard f[0]
View Alpha register	Command (42, PEM)		42AVIEW	42AVIEW	Compatibility	View the Alpha register (default K) contents (text string) in the top left part of the screen, without TI (for use in Program Entry Mode) ; if the contents include the ϵ symbol, optionally display one or more TI's at the top, X, Y, Z line ; example: "top line = ϵ X = ϵ Y = ϵ Z = " ; this is a HP-42S/DM42(n) calculator compatible command (Info : If $\square$ ACT is SET, 42AVIEW will print when executed from the keyboard in MAN, NORM or TRACE ; in Program Entry Mode, $\square$ EN must be SET as well ; If $\square$ ACT is CLEAR and $\square$ EN is SET, 42AVIEW halts execution (R/S))
Volume conversions	MENU		[Volume:]	Volume:	Volume conversions	Convert between units of volume ; this menu has two pages, one for the UK (imperial) units, the other for the US (customary) units : this is determined by flag CONV _{US} , which is SET for US units on page 1 ; CLEAR for UK units on page 1 (default CLEAR) (Info : Flag CONV _{US} may be SET for <to> ϵ -> <to> unit conversion buttons ; CLEAR for <from> $\rightarrow$ ϵ - <from> unit conversion buttons (default SET)) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_Volume_page_1.pdf
Volume down	Setting (pgm, HW)	11	VOL↓	VOL↓ ₁₁	Input-Output	Set audio volume down (0-11) ; hardware only (DMCP setting) (Info : Error 126 -- Not available on the simulator -- is raised when this setting is performed on the simulator)
Volume integral	Character		$\oint$		Characters	Character $\oint$ (Fontcode : 2230 ₁₆)
Volume of ideal gas	Constant		V _m		Constants	Constant # 54 V _m volume.gas = +2.241396954501413773501110288675056 × 10 ⁻² (Unit : m ³ /mol)
Volume up	Setting (pgm, HW)	11	VOL↑	VOL↑ ₁₁	Input-Output	Set audio volume up (0-11) ; hardware only (DMCP setting) (Info : Error 126 -- Not available on the simulator -- is raised when this setting is performed on the simulator)
Von Klitzing constant	Constant		R _K		Constants	Constant # 41 R _K c.klitzing = +2.581280745930450666004551670608744 × 10 ⁴ (Unit : Ω)
W	Character		W		Characters	Character W (Fontcode : 0057 ₁₆) ; Keyboard alpha [x]
w	Character		w		Characters	Character w (Fontcode : 0077 ₁₆) ; Keyboard alpha f[x]
W circumflex	Character		$\hat{W}$		Characters	Character $\hat{W}$ (Fontcode : 0174 ₁₆ ; Info : press [▼] for $\hat{w}$ at [aintL.4] fF6)
w circumflex	Character		$\hat{w}$		Characters	Character $\hat{w}$ (Fontcode : 0175 ₁₆ ; Info : press [▲] for $\hat{W}$ at [aintL.4] fF6)
w macron	Character		$\bar{w}$		Characters	Character $\bar{w}$ (Fontcode : 0382 ₁₆)
W to hp _E	Function (monadic, linked)		W→hp _E		Power conversions	Convert Watt to electrical horsepower (TI : hp _E)
W to hp _M	Function (monadic, linked)		W→hp _M		Power conversions	Convert Watt to metric horsepower (TI : hp _M)
W to hp _{UK}	Function (monadic, linked)		W→hp _{UK}		Power conversions	Convert Watt to UK horsepower (TI : hp _{UK})
Watch	Character		$\odot$		Characters	Character $\odot$ (Fontcode : 231A ₁₆)
Week of Year	Function (monadic)		WOY	WOY	Time functions	Week of Year (of date in X) according to rule set (default : WOY _{ISO}) (TI : Week of Year =)
Weibull cdf (lower)	Function (monadic)		WeibL _⌒	WeibL _⌒	Probability (real)	Weibull cumulative distribution (lower tail)
Weibull cdf (upper)	Function (monadic)		WeibL _⌒	WeibL _⌒	Probability (real)	Weibull cumulative distribution (upper tail)
Weibull distribution	MENU		[WeibL:]	WeibL:	Probability (real)	Weibull probability distribution (continuous) (TI : RegQ = k = ; RegS = λ =) Docs: https://47calc.com/doc/C47/Menus/C47_Menu_WeibL_page_1.pdf
Weibull pdf	Function (monadic)		WeibL _p	WeibL _p	Probability (real)	Weibull probability density function
Weibull qf (inverse)	Function (monadic)		WeibL ⁻¹	WeibL ⁻¹	Probability (real)	Weibull inverse cumulative distribution (quantile)
Weighted mean	Command		$\bar{x}_w$	$\bar{x}_w$	Summary statistics	Data evaluation of weighted mean -- see Formula_XW.png : https://47calc.com/doc/Images/Formula_XW.png (TI : $\bar{x}_w$ =)

FullName	Type	Default	Label	Catalog	Category	Extended description
Weighted population standard deviation	Command		σ_w	σ_w	Summary statistics	Weighted population standard deviation -- see Formula_STDDEVPOP.png : https://47calc.com/doc/Images/Formula_STDDEVPOP.png (TI : $\sigma_w =$)
Weighted population standard deviation	Command		s_w	s_w	Summary statistics	Weighted population standard deviation -- see Formula_SW.png : https://47calc.com/doc/Images/Formula_SW.png (TI : $s_w =$)
Wh to J	Function (monadic, linked)		Wh→J		Energy conversions	Convert Watt-hour to Joule (TI : J)
Who	Command (nonpgm)		WHO	WHO	System	Show calculator development team and contributor's names (TI : Team names)
Wide comma	Character		,		Characters	Character , (Fontcode : 2788 ₁₆)
Wide dot	Character		.		Characters	Character . (Fontcode : 22C5 ₁₆)
Wide period	Character		.		Characters	Character . (Fontcode : 2789 ₁₆)
Word size 16 bits	Setting (pgm)	OFF	16-BIT	16-BIT O	Number bases	Set word size to 16 bits, for Short integer (8.02-8.16) (Info : <m> in SBI indicates sign mode (menu BITSET) ; SBI 16:<m> is shown if flag SBint is SET)
Word size 32 bits	Setting (pgm)	OFF	32-BIT	32-BIT O	Number bases	Set word size to 32 bits, for Short integer (8.02-8.16) (Info : <m> in SBI indicates sign mode (menu BITSET) ; SBI 32:<m> is shown if flag SBint is SET)
Word size 64 bits	Setting (pgm)	ON	64-BIT	64-BIT @	Number bases	Set word size to 64 bits, for Short integer (8.02-8.16) (Info : <m> in SBI indicates sign mode (menu BITSET) ; SBI 64:<m> is shown if flag SBint is SET)
Word size 8 bits	Setting (pgm)	OFF	8-BIT	8-BIT O	Number bases	Set word size to 8 bits, for Short integer (8.02-8.16) (Info : <m> in SBI indicates sign mode (menu BITSET) ; SBI 8:<m> is shown if flag SBint is SET)
Word swap	Function (monadic)		W.SWP	W.SWP	Number bases	Swap words
Wrap edge	Flag (system)	CLEAR	WRPEDG		Matrix operations	SET for wrap edge; CLEAR for wrap edge inactive
Wrap end	Flag (system)	CLEAR	WRPEND		Matrix operations	SET for wrap end; CLEAR for wrap end inactive
Write/save & export all	Command (SIM)		WRXPall	WRXPall	Input-Output	Write/save & export all programs as binary and rich text files to PROGRAMS/ALLPGMS/ in FAT ; simulator only (Info : TI : Only available on the simulator -- is raised when this command is performed on the hardware)
Write/save program	Command		WRITEP	WRITEP	Input-Output	Write/save program to backup file (.p47) in FAT for READP (TAM : WRITEP _ TamLbOnly menu ; DMCP : File save dialog ("Save Program" -- PROGRAMS/) ; TI : Saved)
X	Character		X		Characters	Character X (Fontcode : 0058 ₁₆) ; Keyboard alpha [1]
x	Character		x		Characters	Character x (Fontcode : 0078 ₁₆) ; Keyboard alpha f [1]
X approximates?	Command (logical)		$x \approx ?$	$x \approx ?$	Programming	Test X approximates register or variable contents (rounded values are equal) (TAM : $x \approx ?$ _ _ _ TamCmp menu)
X Balanced	Function (monadic)		$X \rightarrow \text{BAL}$	$X \rightarrow \text{BAL}$	Electrical engineering	Create balanced 3 phase quantities by pushing onto stack $X \times a$, then $X \times a \times a$
x circumflex	Character		$\hat{x}$		Characters	Character $\hat{x}$ (Fontcode : 0379 ₁₆)
X equals -0?	Command (logical)		$x = -0 ?$	$x = -0 ?$	Programming	Test X equals -0 (Real number)
X equals +0?	Command (logical)		$x = +0 ?$	$x = +0 ?$	Programming	Test X equals +0 (Real number)
X equals?	Command (logical)		$x = ?$	$x = ?$	Programming	Test X equals register or variable contents (TAM : $x = ?$ _ _ _ TamCmp menu)
X greater than or equal to +0?	Command (logical)		$x \geq +0 ?$	$x \geq +0 ?$	Programming	Test X is greater than or equal to +0 (Real number)
X greater than or equal to?	Command (logical)		$x \geq ?$	$x \geq ?$	Programming	Test X is greater than or equal to register or variable contents (TAM : $x \geq ?$ _ _ _ TamCmp menu)
X greater than?	Command (logical)		$x > ?$	$x > ?$	Programming	Test X is greater than register or variable contents (TAM : $x > ?$ _ _ _ TamCmp menu)
x hat	Command		$\hat{x}$	$\hat{x}$	Plotting and curve fitting	Estimation of x
X less than or equal to -0?	Command (logical)		$x \leq -0 ?$	$x \leq -0 ?$	Programming	Test X is less than or equal to -0 (Real number)
X less than or equal to?	Command (logical)		$x \leq ?$	$x \leq ?$	Programming	Test X is less than or equal to register or variable contents (TAM : $x \leq ?$ _ _ _ TamCmp menu)
X less than?	Command (logical)		$x < ?$	$x < ?$	Programming	Test X is less than register or variable contents (TAM : $x < ?$ _ _ _ TamCmp menu)
x macron	Character		$\bar{x}$		Characters	Character $\bar{x}$ (Fontcode : 0378 ₁₆)
X not equal to?	Command (logical)		$x \neq ?$	$x \neq ?$	Programming	Test X is not equal to register or variable contents (TAM : $x \neq ?$ _ _ _ TamCmp menu)
X to alpha	Function (monadic)		$x \rightarrow \alpha$	$x \rightarrow \alpha$	Text functions	Append character, character code (converted to character), text string or real matrix (converted to text string) to register or variable (TAM : $x \rightarrow \alpha$ _ _ _ Tam menu ; Info : when X is selected as the destination register or variable, the input is replaced, not appended to (unless it contains a text string in which case it is appended to itself) ; in all cases the original value of X is saved in LASTx ; Error 33 -- Output would exceed 508 characters -- may be raised)
X to alpha	Function (monadic, old)		$>x \rightarrow \alpha <$		Text functions	Old version of the function $x \rightarrow \alpha$, that did not use TAM, to convert character code in X to alpha character (code value pushed to Y) (Info : May be found in older user programs, use $x \rightarrow \alpha$ on [α .FN.1] F3 instead)

FullName	Type	Default	Label	Catalog	Category	Extended description
X to Alpha register	Function (42, monadic)		42XT0A	42XT0A	Compatibility	Append character, character code (converted to character), text string or real matrix (converted to text string) to Alpha register (default K) ; this is a HP-42S/DM42(n) calculator compatible function (Info : For the 42-compatible alpha functions and commands, the Alpha register (default K) is limited to 44 characters)
X to date	Function (monadic)		x→D	x→D	Time functions	Convert date input number to date according to CLK date format settings DD.MM.YYYY, MM/DD/YYYY or YYYY-MM-DD ; implied conversion set by YY does not apply (TI : Weekday ; Ref : https://47calc.com/doc/C47/Reference/C47_Date_formats.pdf)
x under root	Character		$\sqrt{x}$		Characters	Character $\sqrt{x}$ (Fontcode : 037F16)
XFN : 10 to the power x	Function (monadic, XFN)		X10^X	X10^X	Extended accuracy	Extended accuracy function : 10 to the power x, for compound input from three consecutive stack registers : $10^{X \times Y + Z}$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign X10^X to f[LOG] (10^X) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\sqrt{x}$ is displayed during calculation ; function not available on DM42 hardware)
XFN : Add	Function (dyadic, XFN)		XADD	XADD	Extended accuracy	Extended accuracy function : Add, for compound input from six consecutive stack registers : $(T \times A + B) + (X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XADD to [+] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\sqrt{x}$ is displayed during calculation ; function not available on DM42 hardware)
XFN : Arc cosine	Function (monadic, XFN)		XACOS	XACOS	Extended accuracy	Extended accuracy function : Arc cosine, for compound input from three consecutive stack registers : $\text{ARCCOS}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XACOS to f[COS] (ACOS) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\sqrt{x}$ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : Arc sine	Function (monadic, XFN)		XASIN	XASIN	Extended accuracy	Extended accuracy function : Arc sine, for compound input from three consecutive stack registers : $\text{ARCSIN}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XASIN to f[SIN] (ASIN) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\sqrt{x}$ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : Arc tangent	Function (monadic, XFN)		XATAN	XATAN	Extended accuracy	Extended accuracy function : Arc tangent, for compound input from three consecutive stack registers : $\text{ARCTAN}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XATAN to f[TAN] (ATAN) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\sqrt{x}$ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : Change sign	Function (monadic, XFN)		XCHS	XCHS	Extended accuracy	Extended accuracy function : Change sign, for compound input from three consecutive stack registers : $-(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) and sign of X and Z is changed ; load state file STATE/xfnToC47user.s47 to assign XCHS to [CHS] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\sqrt{x}$ is displayed during calculation ; function not available on DM42 hardware)

FullName	Type	Default	Label	Catalog	Category	Extended description
XFN : Common logarithm	Function (monadic, XFN)		XLOG	XLOG	Extended accuracy	Extended accuracy function : Common logarithm, for compound input from three consecutive stack registers : $\text{LOG}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XLOG to [LOG] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Convert X to compound	Command (XFN)		X $\rightarrow$ XFN	X $\rightarrow$ XFN	Extended accuracy	Extended accuracy functionVirtual compound data type (0/1.0-1.5 ; 0/1.0 ; 0/1.0) : Convert X to Virtual compound data type (1.0-1.5 ; 0 ; 1.0) triplet in X, Y, Z ; load state file STATE/xfnToC47user.s47 to assign X $\rightarrow$ XFN to [Σ] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Cosine	Function (monadic, XFN)		XCOS	XCOS	Extended accuracy	Extended accuracy function : Cosine, for compound input from three consecutive stack registers : $\text{COS}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XCOS to [COS] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : Degrees-radians-gradians	Function (monadic, cyclic, nonpgm, XFN)		XDRG	XDRG	Extended accuracy	Extended accuracy function : Degrees-radians-gradians, for compound input from three consecutive stack registers : $\text{DRG}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Divide	Function (dyadic, XFN)		XDIV	XDIV	Extended accuracy	Extended accuracy function : Divide, for compound input from six consecutive stack registers : $(T \times A + B) / (X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XDIV to [$\div$] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : e to the power x	Function (monadic, XFN)		X e^X	X e^X	Extended accuracy	Extended accuracy function : e to the power x, for compound input from three consecutive stack registers : $e^{X \times Y + Z}$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign X e^X to f[LN] (e^X) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Expanded inverse tangent	Function (dyadic, XFN)		XATAN2	XATAN2	Extended accuracy	Extended accuracy function : Expanded inverse tangent, for compound input from six consecutive stack registers : $\text{ARCTAN}\{(T \times A + B) / (X \times Y + Z)\}$; returns compound result in X, Y, Z, where Y contains Long integer (0) (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : Modulo	Function (dyadic, XFN)		XMOD	XMOD	Extended accuracy	Extended accuracy function : Modulo, for compound input from six consecutive stack registers : $\text{MOD}\{(T \times A + B), (X \times Y + Z)\}$; returns compound result in X, Y, Z, where Y contains Long integer (0) (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)

FullName	Type	Default	Label	Catalog	Category	Extended description
XFN : Modulo (angle)	Function (dyadic, XFN)		XMOD ₄	XMOD ₄	Extended accuracy	Extended accuracy function : Modulo (angle), for compound input from three consecutive stack registers : MOD{(X × Y + Z), <full circle>}, where <full circle> value is derived from angle tag or Angular Display Mode ; returns compound result in X, Y, Z, where Y contains Long integer (0) (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Multiply	Function (dyadic, XFN)		XMULT	XMULT	Extended accuracy	Extended accuracy function : Multiply, for compound input from six consecutive stack registers : (T × A + B) × (X × Y + Z) ; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XMULT to [x] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Natural logarithm	Function (monadic, XFN)		XLN	XLN	Extended accuracy	Extended accuracy function : Natural logarithm, for compound input from three consecutive stack registers : LN(X × Y + Z) ; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XLN to [LN] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : pi	Command (XFN)		X π	X π	Extended accuracy	Extended accuracy command : X π , to push π onto the stack as a Virtual compound data type triplet with factor 1 of $1. \times 10^{-999}$ in X, factor 2 of 1000 digits of π as 0/1.0 ; 0/1.0) ; Long integer in Y and term of 0. in Z ; load state file STATE/xfnToC47user.s47 to assign X π to f[R $\downarrow$] (π) in USER mode (Info : SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Reciprocal	Function (monadic, XFN)		X1/X	X1/X	Extended accuracy	Extended accuracy function : Reciprocal, for compound input from three consecutive stack registers : 1 / (X × Y + Z) ; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign X1/X to [1/x] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Round to decimal places	Function (monadic, XFN)		XRDP	XRDP	Extended accuracy	Extended accuracy function : Round real number to number of decimal places, subject to rounding mode (RMODE), for compound input from three consecutive stack registers : RDP(X × Y + Z) ; returns compound result in X, Y, Z, where Y contains Long integer (0) (TAM : XRDP ____ TamNonReg menu ; Range is [0, 1034] ; Info : function not available on DM42 hardware)
XFN : Round to significant digits	Function (monadic, XFN)		XRSd	XRSd	Extended accuracy	Extended accuracy function : Round real number to number of significant digits, subject to rounding mode (RMODE), for compound input from three consecutive stack registers : RSD(X × Y + Z) ; returns compound result in X, Y, Z, where Y contains Long integer (0) (TAM : XRSd ____ TamNonReg menu ; Range is [0, 1034] ; Info : function not available on DM42 hardware)
XFN : Set DEG tag or convert to DEG	Function (monadic, XFN)		X $\rightarrow$ DEG	X $\rightarrow$ DEG	Extended accuracy	Extended accuracy function : Set DEG tag or convert to DEG, for compound input from three consecutive stack registers, operates on X (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)
XFN : Set RAD tag or convert to RAD	Function (monadic, XFN)		X $\rightarrow$ RAD	X $\rightarrow$ RAD	Extended accuracy	Extended accuracy function : Set RAD tag or convert to RAD, for compound input from three consecutive stack registers, operates on X (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI Σ is displayed during calculation ; function not available on DM42 hardware)

FullName	Type	Default	Label	Catalog	Category	Extended description
XFN : Sine	Function (monadic, XFN)		XSIN	XSIN	Extended accuracy	Extended accuracy function : Sine, for compound input from three consecutive stack registers : $\text{SIN}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XSIN to [SIN] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : Square	Function (monadic, XFN)		XSQR	XSQR	Extended accuracy	Extended accuracy function : Square, for compound input from three consecutive stack registers : $(X \times Y + Z)^2$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XSQR to f[$\sqrt{x}$] (x^2) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; function not available on DM42 hardware)
XFN : Square root	Function (monadic, XFN)		XSQRT	XSQRT	Extended accuracy	Extended accuracy function : Square root, for compound input from three consecutive stack registers : $\sqrt{(X \times Y + Z)}$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XSQRT to [$\sqrt{x}$] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; function not available on DM42 hardware)
XFN : Subtract	Function (dyadic, XFN)		XSUB	XSUB	Extended accuracy	Extended accuracy function : Subtract, for compound input from six consecutive stack registers : $(T \times A + B) - (X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XSUB to [-] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; function not available on DM42 hardware)
XFN : Tangent	Function (monadic, XFN)		XTAN	XTAN	Extended accuracy	Extended accuracy function : Tangent, for compound input from three consecutive stack registers : $\text{TAN}(X \times Y + Z)$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XTAN to [TAN] in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; displays : Taylor Iter: m/1000; Dig: n/1040, where m is iteration counter, n is number of digits, shown if flag MONIT is SET ; function not available on DM42 hardware)
XFN : xth root	Function (dyadic, XFN)		XXRTY	XXRTY	Extended accuracy	Extended accuracy function : xth root, for compound input from six consecutive stack registers : $x^{y \times z} \sqrt[T \times A + B]{}$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XXRTY to g[R4] ($\sqrt[y]{}$) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; function not available on DM42 hardware)
XFN : y to the power x	Function (dyadic, XFN)		XPOWER	XPOWER	Extended accuracy	Extended accuracy function : y to the power x, for compound input from six consecutive stack registers : $(T \times A + B)^{x \times y \times z}$; returns compound result in X, Y, Z, where Y contains Long integer (0) ; load state file STATE/xfnToC47user.s47 to assign XPOWER to f[1/x] (y^x) in USER mode (Info : Error 31 -- Input data types do not match -- is raised when input contains Complex number (2.0-2.5) ; SBI $\times$ is displayed during calculation ; function not available on DM42 hardware)
XI	Character		Ξ		Characters	Character Ξ (Fontcode : 039E ₁₆ ; Info : press [▼] for ξ at [a...w.1] gF3)
xi	Character		ξ		Characters	Character ξ (Fontcode : 03BE ₁₆ ; Info : press [▲] for Ξ at [A...Q.1] gF3)
XOR	Function (dyadic)		XOR	XOR	Bits and bytes	Bitwise XOR (exclusive OR)
Xor	Character		$\forall$		Characters	Character $\forall$ (Fontcode : 22BB ₁₆)
xsum	Command		xsum	xsum	Summary statistics	Return Σx and Σy in X and Y respectively (TI : $\Sigma x =$; $\Sigma y =$)
xth root	Character		$\sqrt[y]{}$		Characters	Character $\sqrt[y]{}$ (Fontcode : 221C ₁₆)
xth root	Function (dyadic)		$\sqrt[y]{}$	$\sqrt[y]{}$	Mathematics	Xth root of Y ; Keyboard g[R4]

FullName	Type	Default	Label	Catalog	Category	Extended description
xyz or ijk vector display	Flag	CLEAR	3Dxyz		Vector operations	SET for xyz (r0z) display of vectors; CLEAR for ijk (r0k) display of vectors (Info : Indicated by TI subscript of vector elements : xyz or ijk)
xyz or ijk vector display	Setting (pgm)	OFF	3Dxyz		Vector operations	Switch on xyz (r0z) display of vectors (Info : Indicated by TI subscript of vector elements : xyz or ijk)
Y	Character		Y		Characters	Character Y (Fontcode : 0059 ₁₆) ; Keyboard alpha [2]
y	Character		y		Characters	Character y (Fontcode : 0079 ₁₆) ; Keyboard alpha f [2]
Y acute	Character		Ÿ		Characters	Character Ÿ (Fontcode : 00DD ₁₆ ; Info : press [▼] for ŷ at [aintl.4]gF1)
y acute	Character		ŷ		Characters	Character ŷ (Fontcode : 00FD ₁₆ ; Info : press [▲] for Ÿ at [aintl.4]gF1)
Y circumflex	Character		Ŷ		Characters	Character Ŷ (Fontcode : 0176 ₁₆ ; Info : press [▼] for ŷ at [aintl.4]gF2)
y circumflex	Character		ŷ		Characters	Character ŷ (Fontcode : 0177 ₁₆ ; Info : press [▲] for Ÿ at [aintl.4]gF2)
Y diaeresis	Character		ÿ		Characters	Character ÿ (Fontcode : 0178 ₁₆ ; Info : press [▼] for ŷ at [aintl.4]gF3)
y diaeresis	Character		ÿ		Characters	Character ÿ (Fontcode : 00FF ₁₆ ; Info : press [▲] for Ÿ at [aintl.4]gF3)
y hat	Command		ŷ	ŷ	Plotting and curve fitting	Estimation of y
y macron	Character		ȳ		Characters	Character ȳ (Fontcode : 0233 ₁₆)
y to the power x	Function (dyadic)		y ^x	y ^x	Mathematics	Raise value in the Y-register to the power in the X-register ; Keyboard f [1/x]
y under root	Character		ȳ		Characters	Character ȳ (Fontcode : 0232 ₁₆)
yd to m	Function (monadic, linked)		yd→m		Distance conversions	Convert yard to metre (TI : m)
Year	Function (monadic)		YEAR	YEAR	Time functions	Year (of date in X)
year to s	Function (monadic, linked)		year→s		Time conversions	Convert year to second (TI : s)
Year-month-day	Setting (pgm)	ON	YMD	YMD Ⓢ	Display	Switch on YYYY-MM-DD display mode (Format : YYYY-MM-DD ; Info : SBI is shown if flag SBdate is SET)
Year-month-day	Flag (system)	SET	YMD		Display	SET for YYYY-MM-DD display mode; CLEAR for YYYY-MM-DD display mode inactive (Format : YYYY-MM-DD ; Info : SBI is shown if flag SBdate is SET)
Yen	Character		¥		Characters	Character ¥ (Fontcode : 00A5 ₁₆)
Yes	Command		YES		User interface	Respond : Yes
yīn to m	Function (monadic, linked)		yīn→m		Distance conversions	Convert yīn to metre (TI : m)
Z	Character		Z		Characters	Character Z (Fontcode : 005A ₁₆) ; Keyboard alpha [3]
z	Character		z		Characters	Character z (Fontcode : 007A ₁₆) ; Keyboard alpha f [3]
Z acute	Character		Ž		Characters	Character Ž (Fontcode : 0179 ₁₆ ; Info : press [▼] for ž at [aintl.4]gF4)
z acute	Character		ž		Characters	Character ž (Fontcode : 017A ₁₆ ; Info : press [▲] for Ž at [aintl.4]gF4)
z caron	Character		ž		Characters	Character ž (Fontcode : 017E ₁₆ ; Info : press [▲] for Ž at [aintl.4]gF6)
z circumflex	Character		Ž		Characters	Character Ž (Fontcode : 038D ₁₆)
Z dot	Character		Ž		Characters	Character Ž (Fontcode : 017B ₁₆ ; Info : press [▼] for ž at [aintl.4]gF5)
z dot	Character		ž		Characters	Character ž (Fontcode : 017C ₁₆ ; Info : press [▲] for Ž at [aintl.4]gF5)
z macron	Character		Ț		Characters	Character Ț (Fontcode : 0383 ₁₆)
Z*Y modulo X	Function (triadic)		^MOD	^MOD	Integers	Z*Y modulo X
Zcaron	Character		Ț		Characters	Character Ț (Fontcode : 017D ₁₆ ; Info : press [▼] for ž at [aintl.4]gF6)
Zero	Constant		#		Constants	Constant # 79 zero = 0
Zero imaginary part?	Command (logical)		Im=0?	Im=0?	Programming	Test X has imaginary part equal to zero
Zero real part?	Command (logical)		Re=0?	Re=0?	Programming	Test X has real part equal to zero
ZETA	Character		Ζ		Characters	Character Ζ (Fontcode : 0396 ₁₆ ; Info : press [▼] for ζ at [a...w.1]fF1)