

Let us create a simple sample graph:

1. use the stats system to enter 51 coordinates for two cycles of a sine wave.
2. inspect the STATS matrix thus created below.
3. draw the graph.

For convenience, the eRPN commands are written in-line, as typed.

Tip: I used battery power to test the program, but I would rather suggest USB power - matrix generation and graph preparation are quite a bit quicker on USB power:

First, set up, clear stats and create a loop counter R00 from 51 to 1 to create 51 coordinate points. I chose 51, because 25 x-points will be negative, 1 will be zero and 25 x-points will be positive.

```
f[PRGM] g[GTO] .. g[LBL] α SIN_EX ENTER
f[STAT] g[CLΣ]
f[MODE] [RAD]
51 STO 00
g[LBL] α LOOP1 ENTER
```

(of course the g-shift was needed to get the number 1 (in LOOP1) in alpha mode)

Now scale the counter to produce an x value in radians, from  $-2\pi$  to  $2\pi$ , by doing:  $\{[(R00 - 1) / -25] + 1\} * 2\pi$

```
RCL 00 1 -
25 CHS ÷ 1 + 2
f[π] × ×
```

Calculate the function  $y = \sin(x)$ , and swap to get y in Y and x in X

```
ENTER
SIN
x↔y
```

Use  $\Sigma+$  to add the coordinate point to the stats system and therefore to the STATS matrix.

$\Sigma+$

Repeat the loop, decrementing the loop counter until 0, and skip if 0

```
g[LOOP] DSZ 00
g[GTO]  $\alpha$  LOOP1 ENTER
g[RTN] f[PRGM]
```

Now, set your favourite display mode, mine is

f[DISP] SIG 3

and run the program:

```
XEQ PRGM S [SIN_EX]
```

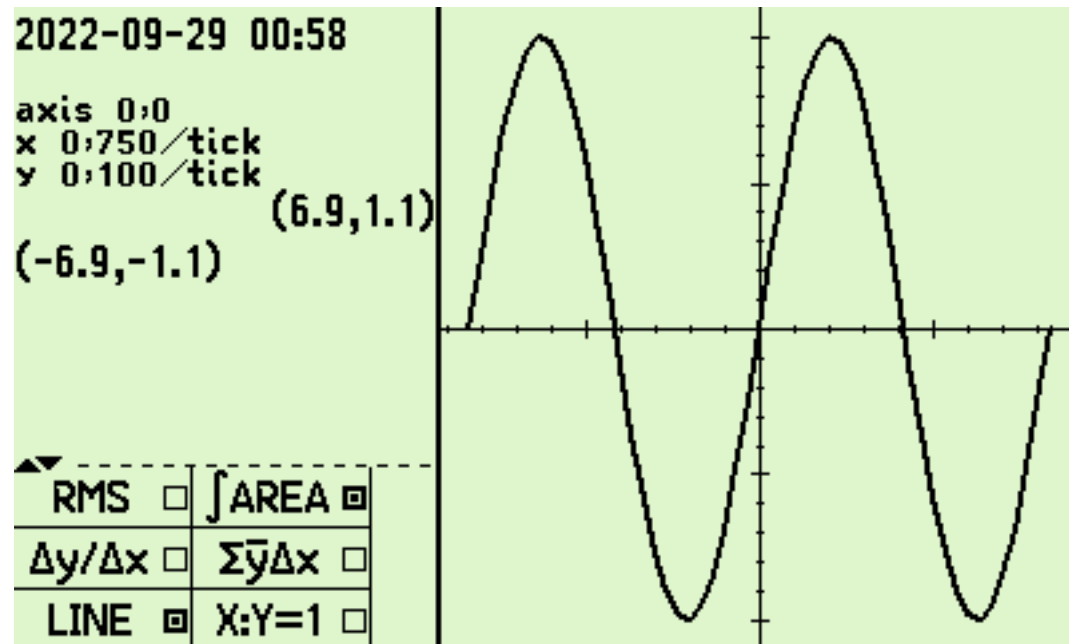
After about 10 seconds the 51 points are written and you can check the points:

```
RCL VAR S STATS
```

After seeing the 51x2 matrix, you can plot it. There was no need to recall the matrix, it was only to demo matrix recall.

Plot using the dedicated scientific graphing,

```
g[PL0T] PLSTAT
```



Exercise: Go back to the program, and change the function from sin to sinc (from the f[MODE] TRIG menu) and plot it.

Reference: C43 graphing example listed in the Forum:

<https://forum.swissmicros.com/viewtopic.php?f=2&t=2216&p=24433&hilit=Our+next+release+is+available%2C+mostly#p24433>

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