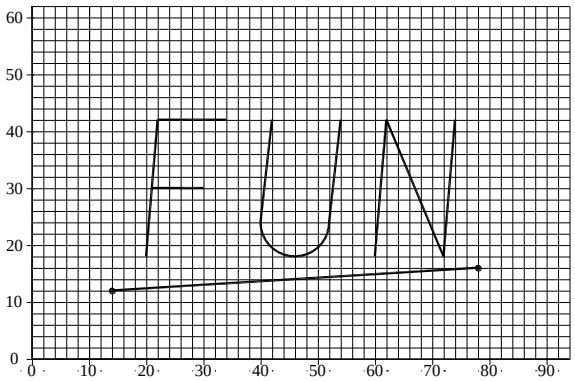
Fun with Fonts **Name**

In Word Processing, a *Font* is a set of printed characters generally corresponding to the keyboard's characters. More specifically, at the machine level, a Font is a set of instructions that control how a device, such as a monitor or printer, displays each character. A very simple Font might consist of stick figures made of circles and lines.

Suppose we want to cut a message into a plaque with a computer milling machine. What instructions should be fed to the machine to create such a message? Our task is to determine the 10 equations that create FUN and test them with the TI-graphing calculator. To keep things simple, we'll use stick characters and lay them out in a window corresponding to one pixel per grid point.

To plot a line segment, we must restrict the ***domain*** of the line. That is, the x-values where the line is valid. We do that algebraically by writing $y = m x + b$, $c \leq, x \leq d$. Then the line is only valid from $x = c$ to $x = d$. On the TI we do this with a logical operator. A logical operator is either *true* (1) or *false* (0). In TI language, the above line would be written as $Y_1 = (m X + b)/(x \geq c)/(x \leq d)$. When the logical operators are false, we get division by zero and the line is undefined hence it won't plot.



Example: Find the line underlining FUN

Find 2 pts: (14, 12) (78, 16)

Find m: $m = \frac{16-12}{78-14} = \frac{4}{64} = \frac{1}{16}$

Find b: $b = y - mx = 16 - (\frac{1}{16})(78) = \frac{89}{8}$

Domain: $14 \leq x \leq 78$

Line's Eqn: $y = \frac{1}{16}x + \frac{89}{8}$, $14 \leq x \leq 78$

$\backslash Y_1 = (x/16 + 89/8)/(x \geq 14)/(x \leq 78)$

$\backslash Y_2 =$

$\backslash Y_3 =$

$\backslash Y_4 =$

$\backslash Y_5 =$

$\backslash Y_6 =$

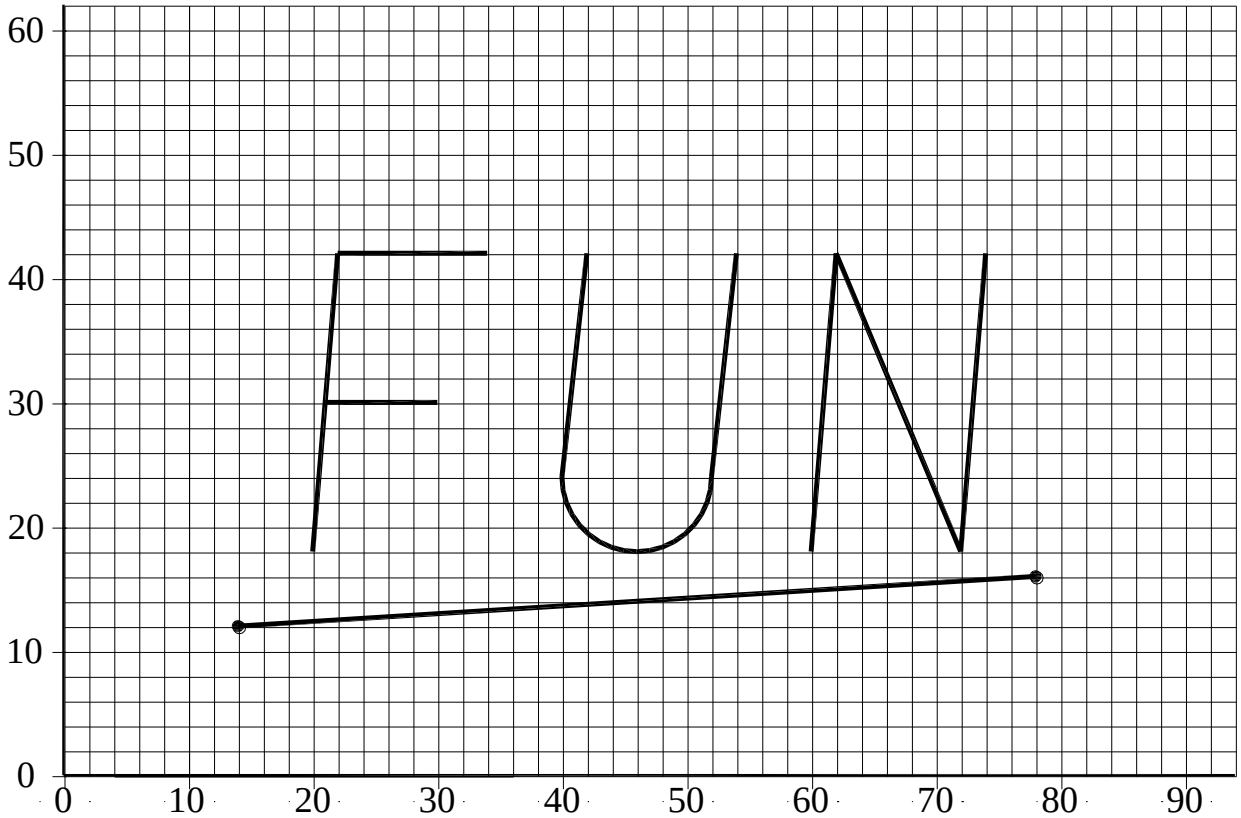
$\backslash Y_7 =$

$\backslash Y_8 =$

$\backslash Y_9 =$

$\backslash Y_0 =$

Be Sure To Attach Your Work Neatly Showing How You Obtained Each Equation. Then plot on the TI.



For extra credit, create this 'F' using 7 equations. You will need to use parabolas and circles to make the curves.