2.3 Graph Equations

TEKS a.5, a.6

QUESTION How can you use a graphing calculator to graph an equation?

You can use a graphing calculator to graph equations in two variables. On most calculators, you must first write the equation in the form $y = f(x)$.

EXAMPLE Graph a linear equation

Graph the equation $x + 4y = 8$.

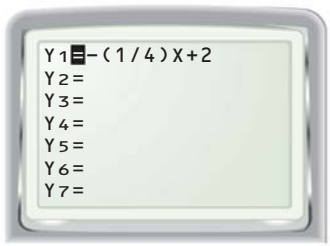
STEP 1 *Solve for y*

First, solve the equation for y so that it can be entered into the calculator.

$$x + 4y = 8$$
$$4y = -x + 8$$
$$y = -\frac{1}{4}x + 2$$

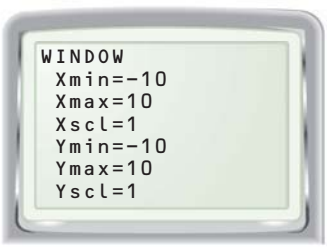
STEP 2 *Enter equation*

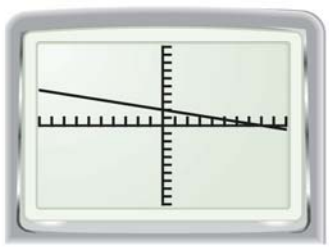
For fractional coefficients, use parentheses. So, enter the equation as $y = -(1/4)x + 2$.



STEP 3 *Set viewing window and graph*

Enter minimum and maximum x- and y-values and x- and y-scales. The viewing window should show the intercepts. The *standard viewing window* settings and the corresponding graph are shown below.





PRACTICE

Graph the equation in a graphing calculator's standard viewing window.

1. $y + 14 = 17 - 2x$ **2.** $3x - y = 4$ **3.** $3x - 6y = -18$

Graph the equation using a graphing calculator. Use a viewing window that shows the x- and y-intercepts.

4. $8x = 5y + 16$ **5.** $4x = 25y - 240$ **6.** $1.25x + 4.2y = 28.7$