

ACTIVITY 2.3

Using Technology

Graphing Calculator Activity for use with Lesson 2.3

Graphing Equations

You can use a graphing calculator to graph equations of the form $y = f(x)$.

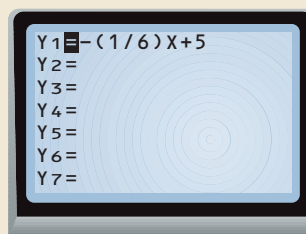
EXAMPLE

Use a graphing calculator to graph the equation $x + 6y = 30$.

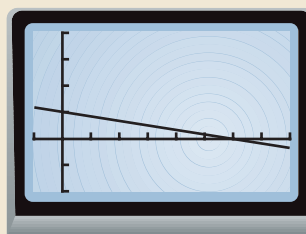
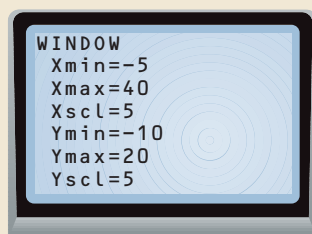
SOLUTION

- 1 First solve the equation for y so that it can be entered into the calculator.
- 2 When you have fractional coefficients, you must use parentheses. So, enter the equation as $y = -(1/6)x + 5$.

$$\begin{aligned}x + 6y &= 30 \\6y &= -x + 30 \\y &= -\frac{1}{6}x + 5\end{aligned}$$



- 3 Finally, set a viewing window for the graph by entering the least and greatest x - and y -values and the x - and y -scales. The *standard viewing window* is $-10 \leq x \leq 10$ and $-10 \leq y \leq 10$, both with a scale of 1. The viewing window you choose should show all of the important features of the graph, such as the intercepts. The settings for the viewing window and the corresponding graph of the equation $y = -\frac{1}{6}x + 5$ are shown.



EXERCISES

Use a graphing calculator to graph the equation in the standard viewing window.

1. $y + 11 = 16 - 3x$
2. $2x - y = 6$
3. $x - 3y = -2$

Use a graphing calculator to graph the equation in the indicated viewing window.

4. $17 - 2x = -y$ $X_{\min} = -2, X_{\max} = 12, X_{\text{scl}} = 2,$
 $Y_{\min} = -20, Y_{\max} = 2, Y_{\text{scl}} = 5$
5. $y + 4 = 2x + 1$ $X_{\min} = -2, X_{\max} = 5, X_{\text{scl}} = 1,$
 $Y_{\min} = -4, Y_{\max} = 1, Y_{\text{scl}} = 1$

Use a graphing calculator to graph the equation. Choose a viewing window that shows the x - and y -intercepts.

6. $7x = 3y + 20$
7. $1.54x + 2.1y = 63.4$
8. $\frac{7}{10}x = 5y - 104$

STUDENT HELP



See keystrokes for several models of calculators at www.mcdougallittell.com