▶ ACTIVITY 7.1

Using Technology

Solving Linear Systems by Graphing

▶ EXAMPLE

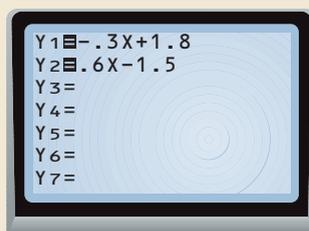Solve the linear system by graphing.

$$y = -0.3x + 1.8 \qquad \textbf{Equation 1}$$
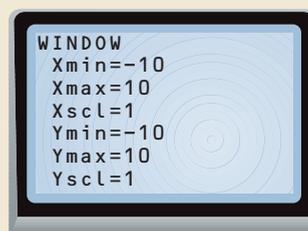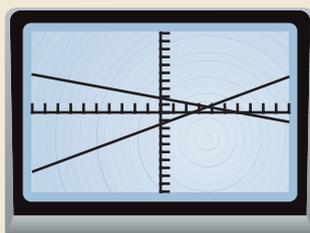$$y = 0.6x - 1.5 \qquad \textbf{Equation 2}$$
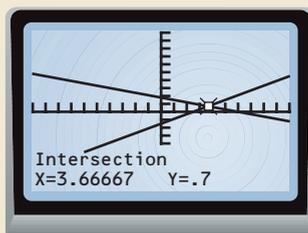
▶ SOLUTION

1 Enter the equations.

```
Y1◻-.3X+1.8
Y2◻.6X-1.5
Y3=
Y4=
Y5=
Y6=
Y7=
```

2 Set an appropriate viewing window to graph both equations.

```
WINDOW
  Xmin=-10
  Xmax=10
  Xscl=1
  Ymin=-10
  Ymax=10
  Yscl=1
```

3 Graph both equations. You can use the direction keys to move the cursor to the approximate intersection point.

4 Use the *Intersection* feature to estimate a point where the graphs intersect. Follow your calculator's procedure to display the coordinate values.

```
Intersection
X=3.66667    Y=.7
```

▶ The solution of the system of linear equations is approximately (3.7, 0.7).

▶ EXERCISES

In Exercises 1–4, solve the linear system. Check the result in each of the original equations.

1. $y = x + 6$
$y = -x - 1$

2. $3x + y = -2$
$x - y = -8$

3. $-0.25x - y = 2.25$
$-1.25x + 1.25y = -1.25$

4. $-0.8x + 0.6y = -12.0$
$1.25x - 1.50y = 12.75$

5. Graph the linear system at the right. $3x + 9y = 8$
$2x + 6y = 7$

Describe the lines, and explain why the linear system has no solution.