# 7.1 Solving Linear Systems by Graphing

TEKS a.5, A.8.B

**QUESTION** How can you use a graphing calculator to solve a linear system?

**EXAMPLE** Solve a linear system

**Solve the linear system using a graphing calculator.**

$5x + 2y = 6$ Equation 1
$x - 3y = -5$ Equation 2

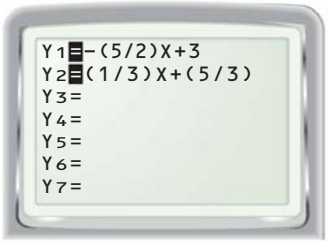
### STEP 1 Rewrite equations

Solve each equation for $y$.

| Equation 1 | Equation 2 |
|---|---|
| $5x + 2y = 6$ | $x - 3y = -5$ |
| $2y = -5x + 6$ | $-3y = -x - 5$ |
| $y = -\frac{5}{2}x + 3$ | $y = \frac{1}{3}x + \frac{5}{3}$ |

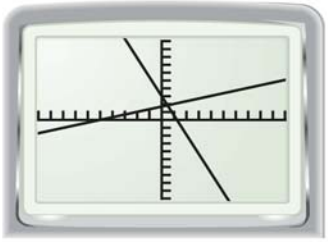
### STEP 2 Enter equations

Press Y= and enter the equations.



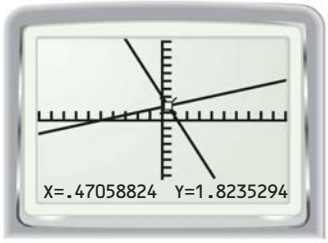

### STEP 3 Display graph

Graph the equations using a standard viewing window.



### STEP 4 Find point of intersection

Use the *intersect* feature to find the point where the graphs intersect.




The solution is about (0.47, 1.8).

**PRACTICE**

**Solve the linear system using a graphing calculator.**

**1.** $y = x + 4$
$y = -3x - 2$

**2.** $5x + y = -4$
$x - y = -2$

**3.** $-0.45x - y = 1.35$
$-1.8x + y = -1.8$

**4.** $-0.4x + 0.8y = -16$
$1.2x + 0.4y = 1$