NAME _____ DATE _____ PERIOD _____

6-1 Graphing Calculator Activity

Solution to a System of Linear Equations

A graphing calculator can be used to solve a system of linear equations graphically. The solution of a system of linear equations can be found by using the **TRACE** feature or by using the **intersect** command under the **CALC** menu.

Example: Solve each system of linear equations.

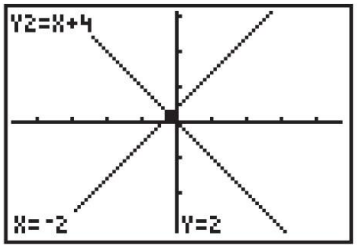
a. $x + y = 0$

$x - y = -4$

Using TRACE: Solve each equation for y and enter each equation into **Y=**.Then graph using **Zoom 8: ZInteger**. Use **TRACE** to find the solution.

Keystrokes: [Y=] [(–)] [X,T,θ,n] [ENTER] [X,T,θ,n] [+] 4 [ZOOM] 6 [ZOOM] 8 [ENTER] [TRACE] [◀] [◀].

The solution is (–2, 2).



[–47, 47] scl:10 by [–31, 31]
scl:10

b. $2x + y = 4$

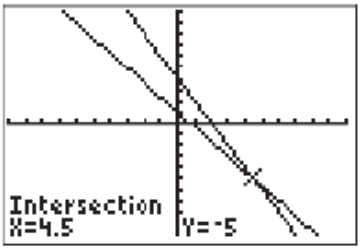
$4x + 3y = 3$

Using CALC: Solve each equation for y, enter each into the calculator, and graph. Use **CALC** to determine the solution

Keystrokes: [Y=] [(–)] 2 [X,T,θ,n] [+] 4 [ENTER] [(] [(–)] 4 [÷] 3 [)] [X,T,θ,n] [+] 1 [ZOOM] 6 [2nd] [CALC] 5 [ENTER] [ENTER] [ENTER].

To change the x–value to a fraction, press [2nd] [QUIT] [X,T,θ,n] [MATH] [ENTER] [ENTER].

The solution is (4.5, –5) or $\left(\frac{9}{2}, -5\right)$.



[–10, 10] scl:1 by [–10, 10]
scl:1

Exercises

Solve each system of linear equations.

1. $y = 2$
$5x + 4y = 18$

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

3. $x + y = -1$
$2x - y = -8$

4. $-3x + y = 10$
$-x + 2y = 0$

5. $-4x + 3y = 10$
$7x + y = 20$

6. $5x + 3y = 11$
$x - 5y = 5$

7. $3x - 2y = -4$
$-4x + 3y = 5$

8. $3x + 2y = 4$
$-6x - 4y = -8$

9. $4x - 5y = 0$
$6x - 5y = 10$