Graphing Calculator Investigation

Systems of Equations

You can use a TI-83 Plus graphing calculator to solve a system of equations.

Example

Solve the system of equations. State the decimal solution to the nearest hundredth.

$2.93x + y = 6.08$
$8.32x - y = 4.11$

Step 1 Solve each equation for y to enter them into the calculator.

|	
$2.93x + y = 6.08$	First equation
$2.93x + y - 2.93x = 6.08 - 2.93x$	Subtract $2.93x$ from each side.
$y = 6.08 - 2.93x$	Simplify.
$8.32x - y = 4.11$	Second equation
$8.32x - y - 8.32x = 4.11 - 8.32x$	Subtract $8.32x$ from each side.
$-y = 4.11 - 8.32x$	Simplify.
$(-1)(-y) = (-1)(4.11 - 8.32x)$	Multiply each side by -1.
$y = -4.11 + 8.32x$	Simplify.

Step 2 Enter these equations in the **Y=** list and graph.

KEYSTROKES: *Review on pages 224–225.*

Step 3 Use the **CALC** menu to find the point of intersection.

KEYSTROKES: 2nd [CALC] 5 ENTER ENTER ENTER

The solution is approximately (0.91, 3.43).
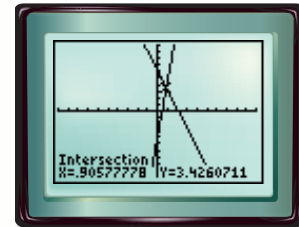
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Exercises

Use a graphing calculator to solve each system of equations. Write decimal solutions to the nearest hundredth.

1. $y = 3x - 4$
$y = -0.5x + 6$

2. $y = 2x + 5$
$y = -0.2x - 4$

3. $x + y = 5.35$
$3x - y = 3.75$

4. $0.35x - y = 1.12$
$2.25x + y = -4.05$

5. $1.5x + y = 6.7$
$5.2x - y = 4.1$

6. $5.4x - y = 1.8$
$6.2x + y = -3.8$

7. $5x - 4y = 26$
$4x + 2y = 53.3$

8. $2x + 3y = 11$
$4x + y = -6$

9. $0.22x + 0.15y = 0.30$
$-0.33x + y = 6.22$

10. $125x - 200y = 800$
$65x - 20y = 140$

www.algebra1.com/other_calculator_keystrokes

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