

Solving a System of Equations with your Graphing Calculator

Write both equations in slope-intercept form, remember that:

- If the system is consistent and independent the slopes of the two lines will be different.
- If the system is inconsistent the slopes will be the same but the y-intercepts will be different.
- If the system is dependent the equations will be identical.

Example: Solve the system

$$y = \frac{2}{3}x + 2$$

$$2x + y = 10$$

Step 1: The first equation is already in slope intercept form. We only need to change the second equation.

$$y = \frac{2}{3}x + 2$$

$$y = -2x + 10$$

Step 2: Enter the system into your calculator and graph.

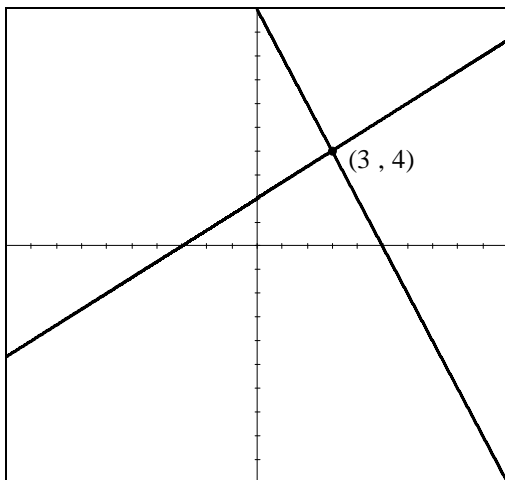
$$Y_1 = 2/3x + 2$$

$$Y_2 = -2x + 10$$

Step 3: If the point of intersection is not in the viewing window you may need to fiddle around some. Adjust the window so that you can see the point of intersection.

Use the intersect feature of your calculator to find the coordinates of the point of intersection. For more detailed instructions see sections V, and VI. in your calculator supplement.

Step 4: The coordinates of the point of intersection give the solution to the system of equations.



Solution: $x = 3, y = 4$

Check your solution.