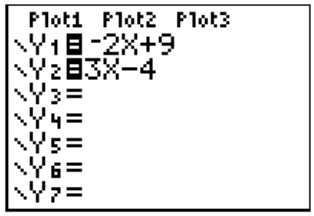
Solving Systems of Equations

(Using your Calculator)

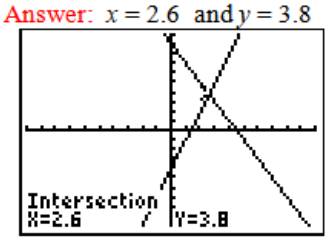
Solving Systems of Equations

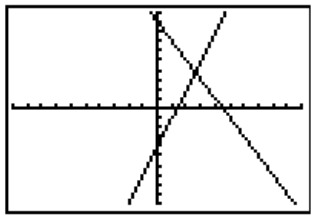
1. Solve the system: $y = -2x + 9$ and $y = 3x - 4$

1. Enter the first equation into **Y_1**.
2. Enter the second equation into **Y_2**.
3. Hit **GRAPH.**
4. Use the **INTERSECT** option to find where the two graphs intersect (the answer).
   2nd TRACE (CALC) #5 intersect
   Move spider close to the intersection.
   Hit **ENTER** 3 times.



5. Answer: $x = 2.6$ and $y = 3.8$





Oct 24-11:06 AM

Practice finding intersections on your own.

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

Solution $(0, -3)$

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

Solution $(-.8\overline{3}, -1.\overline{3})$

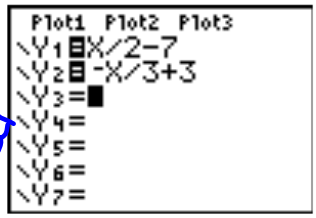
Oct 25-7:27 AM

2. Solve the system: $x - 2y = 14$ and $x + 3y = 9$

The graphing calculator will only accept entries that start with $y =$, so we need to solve these equations for $y =$.

$$y = \frac{x}{2} - 7$$

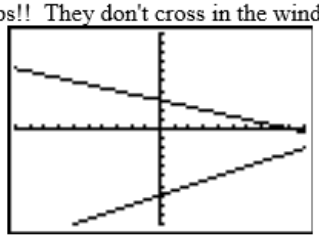
$$y = -\frac{x}{3} + 3$$

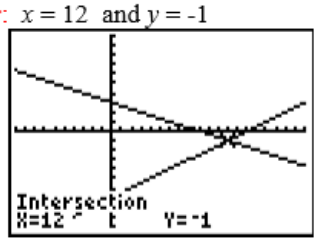


Zoom 6 - gets your graph back to Normal

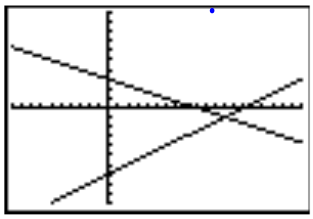
1. Enter the first equation into **Y_1**.
2. Enter the second equation into **Y_2**.
3. Hit **GRAPH**. The graphs appear to intersect OFF the window. We need MORE x-values to the right hand side of the graph. Go to **WINDOW**. Increase the size of **Xmax**. Hit **GRAPH.**
4. Use the **INTERSECT** option to find where the two graphs intersect (the answer).
   2nd TRACE (CALC) #5 intersect
   Move spider close to the intersection.
   Hit **ENTER** 3 times.
5. Answer: $x = 12$ and $y = -1$

Oops!! They don't cross in the window.





Better! Xmax was increased to 20.



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$X+Y=5 \Rightarrow Y=-X+5$

$X-3Y=3$

$(6,-1)$

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

$Y = -\frac{x}{3} + 1$ or $Y = -1/3x + 1$

Steps:

1. Enter both into y =
2. 2nd -> Trace (Calc) -> #5 (intersect)
3. Move spider near intersection (left and right arrow keys)
4. Hit Enter 3x

Oct 25-8:25 AM