Algebra 2 Name: Key

Section 3-1: Solving systems by graphing

Day 2 Notes: Using the calculator

What do we do when the lines do not cross at coordinates that are integers?

What do we do if our y-intercepts are not integers?

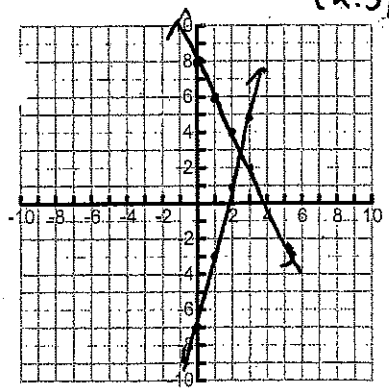
- **Answer: Use your graphing calculator to intersect the 2 lines!**

To intersect 2 lines with your graphing calculators:

1. Type both equations into the **Y =** menu (one in Y_1 and the other in Y_2)
2. Find a good window that shows the intersection point.
   - A. Try ZOOM 6 (ZStandard).
   - B. If that doesn't work, try changing window manually (WINDOW)
3. Press 2ND TRACE, 5: intersect.
4. Press ENTER 3 times and write down the x and y as an ordered pair (x, y).

In #1-2 below, use your graphing calculator to find the solution to each system.

1. $y = -2x + 8$
   $y = 4x - 7$



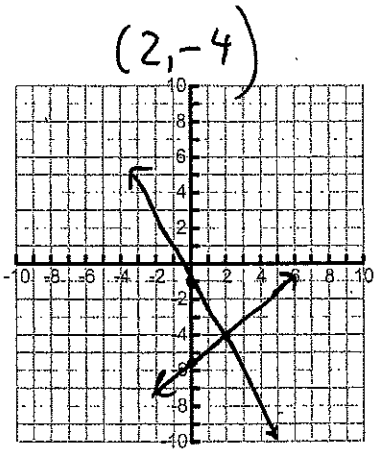
2. $3x + 2y = -2$
   $-4x + 5y = -28$

$\rightarrow 2y = -3x - 2$

$y = -\frac{3}{2}x - 1$

$5y = 4x - 28$

$y = \frac{4}{5}x - \frac{28}{5}$

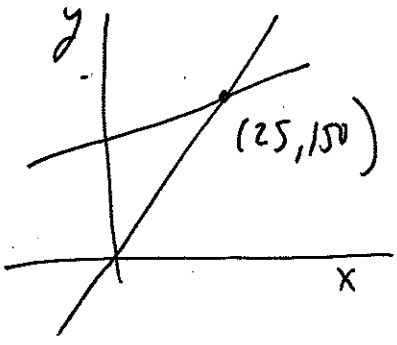


For #3-4 below, write a system of equations to represent the problem. Then solve by finding the intersection of 2 lines.

3. A service club is selling copies of its holiday cookbook to raise funds for a project. The printer's set-up charge is $200, and each book costs $2 to print. The cookbooks will sell for $6 each. How many cookbooks must the club sell to break even (not make a profit but not lose money either). How many must the club sell to make a profit?

Income : $y = 6x$

Expense : $y = 2x + 200$



x = # sold

$y = \$$

$x = 25$ break even

$x > 25$ profit

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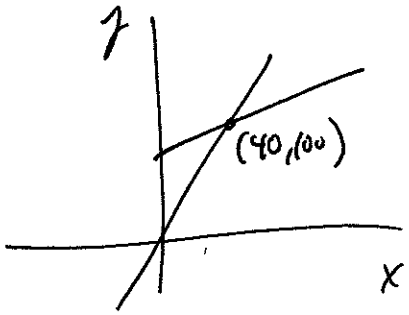
4. The student government is selling candy bars. It costs $1 for each candy bar plus a $60 set-up fee. The group will sell the candy bars for $2.50 each. How many do they need to sell to break even?

Income : $y = 2.50x$

Expense : $y = 1x + 60$

x = # CB sold

y = $



$X = 40$ candy bars break even

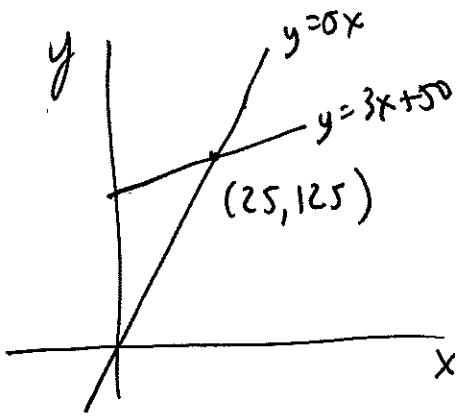
5. At the local Bounce House, you can either have everyone in your party pay $5 each or pay a flat fee of $50 and each person pays only $3. How many people have to be in your party so that each option costs the same amount? If 40 people are in your party, which option should you select?

x = # people

y = charge total $

Option 1: $y = 5x$

Option 2: $y = 3x + 50$



$X = 25$ → both plans cost the same

when $x = 40$, lower option is

$y = 3x + 50$

(it is below other line)

or $5(40)$ vs $3(40) + 50$

$200 > $170