Monday, February 3, 2020

Bell Work:

Complete the following on a sheet of paper and hand it in for feedback (no marks). You may use your calculator to check your work and to do steps, but please show your work!

1) $\frac{(-3)^2 + (-7)(5)}{(-2)^3 + (-5)}$

2) $4(2)^3 - (-10)(-3)$

3) $\frac{3}{4} - \frac{5}{6} + \frac{1}{12}$

4) $\left(\frac{3}{2}\right)^2 - \left(\frac{1}{4}\right)^3$

5) $\frac{3}{4}\left(\frac{2}{5}\right) \div \frac{1}{7}$

6) $\frac{\frac{1}{9} + \left(\frac{5}{6}\right)(-3)}{\left(-\frac{2}{3}\right)^3 + \frac{2}{9}}$

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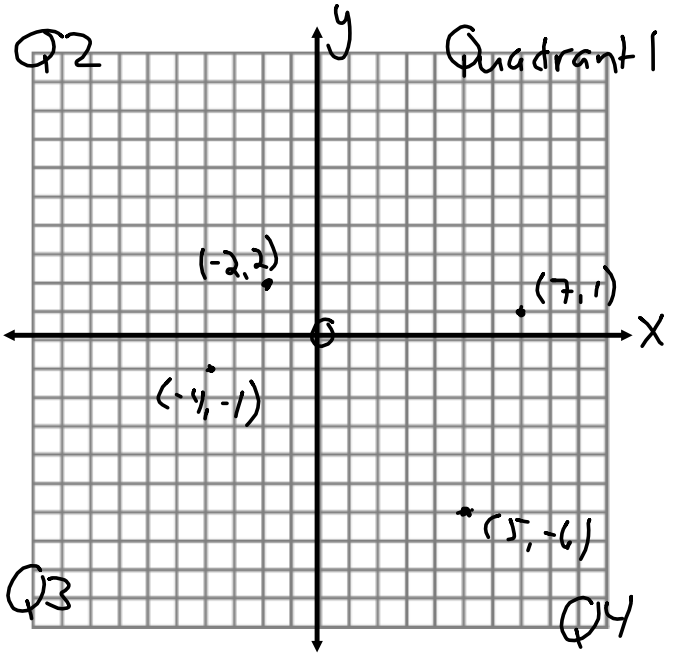

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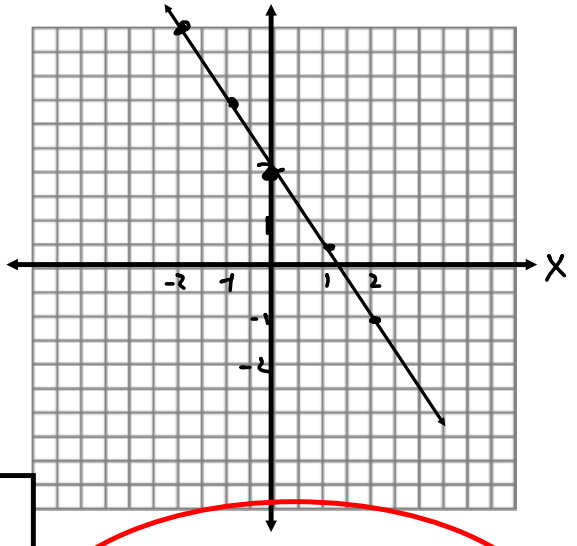
x	y	(x, y)
-2	5	(-2, 5)
-1	$3\frac{1}{2}$	$(-1, 3\frac{1}{2})$
0	2	(0, 2)
1	$\frac{1}{2}$	$(1, \frac{1}{2})$
2	-1	(2, -1)



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Let x = -2

$3(-2) + 2y = 4$

$-6 + 6 + 2y = 4 + 6$

$\frac{2y}{2} = \frac{10}{2}$

$y = 5$

Let x = -1

$3(-1) + 2y = 4$

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

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

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

* Subtract $1\frac{1}{2}$ from the previous y-value to get the next

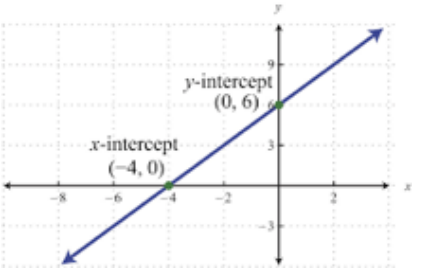
[redacted]

2) Using x and y - Intercepts

This is much faster than a table of values if you are dealing with a linear relation.

x - intercept - the point where a graph crosses the x - axis (y = 0)

y - intercept - the point where a graph crosses the y - axis (x = 0)



To graph using this information:

- Find the x - intercept by letting y = 0 in the equation of the line. **This gives you a point, (a, 0).**
- Find the y - intercept by letting x = 0 in the equation of the line. **This gives you a point, (0, b).**
- Plot the two points and connect them (with a ruler!).

Example:

Graph 3x - 9y = -36 using intercepts.

① x-int

Let y = 0

$\frac{3x}{3} = \frac{-36}{3}$

$x = -12$

$(-12, 0)$

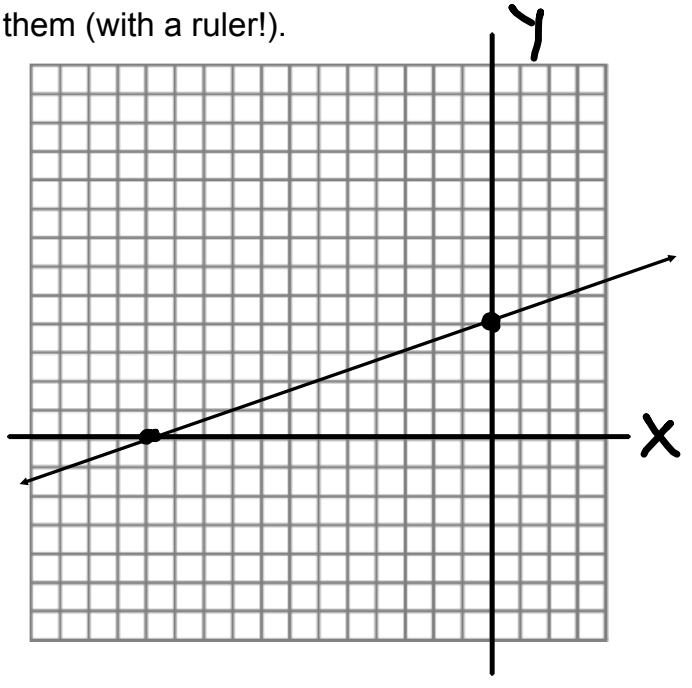
② y-int

Let x = 0

$\frac{-9y}{-9} = \frac{-36}{-9}$

$y = 4$

$(0, 4)$



3) Using Slope and the y - Intercept

ALWAYS do this if your equation is of the form **y = mx + b.**

To graph using slope and y - intercept:

- Rearrange the equation so that it is in y = mx + b form (if necessary). Remember that terms switch signs if they switch sides!
- Plot the y - intercept (0, b).
- Count out the slope ($m = {}^{rise}/_{run}$) from this point.
- Plot a point there and connect it to the y-intercept.

Example: Rewrite each equation in slope y - intercept form, and then graph the line.

a) $-9x + 3y = 18$

$+9x \quad +9x$

$\frac{3y}{3} = \frac{9x}{3} + \frac{18}{3}$

$y = \frac{3}{1}x + 6$

y-int: 6

$m = \frac{3}{1}$

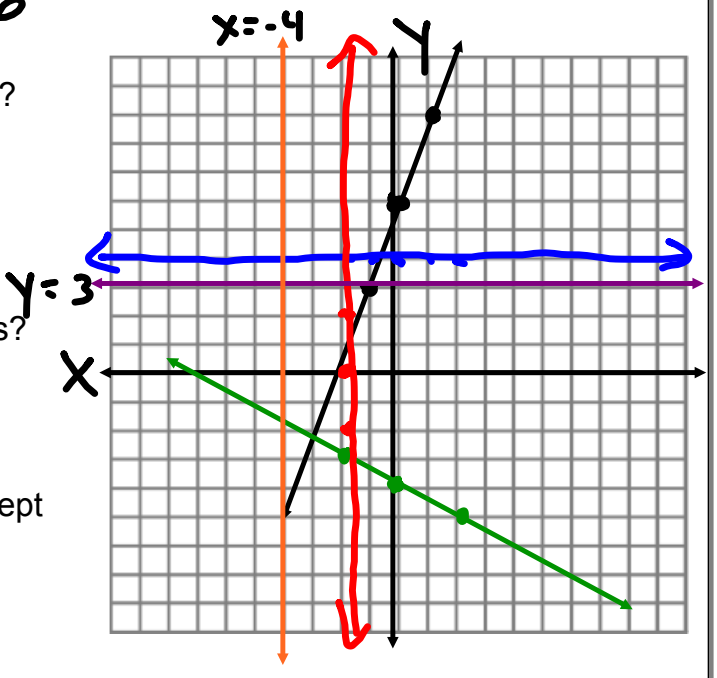
b) $-2y = x + 8$

$\frac{-2y}{-2} = \frac{x}{-2} + \frac{8}{-2}$

$y = -\frac{1}{2}x - 4$

y-int: $(0, -4)$

$m = -\frac{1}{2}$



Food for Thought:

1. Graph y = 4. What type of line is this?

Horizontal line (slope is zero)

2. Graph x = -2. What type of line is this?

Vertical line (slope is undefined)

3. Draw a horizontal line with a y-intercept of 3. What is its equation?

$b = 3$, $m = 0$ $\quad y = 3$

4. Draw a vertical line with an x-intercept of -4. What is its equation?

$x = -4$