

Warm up

1. Decide whether the given ordered pair is a solution of the equation.

a) $-5x - 8y = 7$ $(-3, 1)$ b) $y = -4$ $(-4, 8)$

x y
 $-5(-3) - 8(1) = 7$
 $15 - 8 = 7$
 $7 = 7$ ✓
yes

$8 \neq -4$
NO

2. Rewrite the equation in function form and find three different ordered pairs that are solutions of the equation. (Hint: make a table of values!)

a) $x + 4y = 48$ b) $-2x - 2y = 4$

$-x$ $-x$
 $4y = \frac{48-x}{4}$
 $y = \frac{48-x}{4}$
 $y = 12 - \frac{1}{4}x$

x	y
-1	$\frac{49}{4}$
0	12
1	$\frac{47}{4}$

$\frac{48 - (-1)}{4} = \frac{49}{4}$
 $\frac{48 - 0}{4} = \frac{48}{4}$
 $\frac{48 - 1}{4} = \frac{47}{4}$

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

x	y
-2	0
0	-2
2	4

$\frac{4+2(-2)}{-2} = \frac{0}{-2} = 0$
 $\frac{4+2(0)}{-2} = \frac{4}{-2} = -2$

Homework Questions?

On the top of your paper (by your name) rate yourself for this section:

4 - I can summarize the concepts and explain it to others

3 - I can apply the concept to answer questions correctly

2 - I can apply the concepts but with some mistakes

1 - I need help and know how to apply the concept

0 - I can't apply the concept, even with help

Rating of 0-2 is a warning signal to me that you need help

4.4 Graphing Lines Using Intercepts

Goals: • Find the intercepts of the graph of a linear equation and then use them to make a quick graph of the equation.

EQ: What is the process for graphing using intercepts?

The Unit Organizer NAME _____
DATE _____ Mo/Date/Year

← Algebra 1.5 →

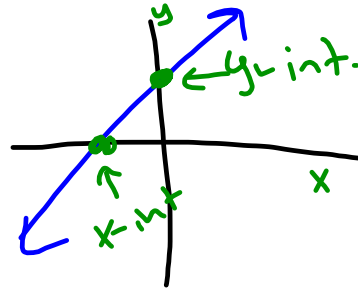
② LAST UNIT/Experience Solving Linear Equations	① CURRENT UNIT Graphing Linear Equations & Functions	③ NEXT UNIT/Experience Writing Linear Equations
⑧ Student Activities or Assignments 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8	⑤ UNIT MAP 	
⑦ UNIT SELF-TEST QUESTIONS 1. How do you use a table to graph a line? 2. How do I find the intercepts in order to graph a line? 3. How can I calculate the slope with coordinates, or a graph, or a real world situation? 4. How do I write and solve a direct variation model? 5. How can I graph a line using the slope and y-intercept? 6. How can I determine a function and then evaluate it?	Graph Determine Identify Calculate	⑥ UNIT RELATIONSHIPS

Vocabulary

x-intercept:

where the graph crosses the x-axis

$$(x, 0)$$



y-intercept:

where the graph crosses the y-axis

$$(0, y)$$

Example 1: Find x- and y-intercepts

Find the x- and y-intercepts of the graph of the equation $-3x + 4y = 12$.

$$\begin{array}{l}
 \text{x-int} \\
 \underline{y = 0} \\
 -3x + \cancel{4(0)} = 12 \\
 -3x = 12 \\
 \frac{-3x}{-3} = \frac{12}{-3} \\
 \boxed{x = -4} \\
 (-4, 0)
 \end{array}$$

$$\begin{array}{l}
 \text{y-int} \\
 \underline{x = 0} \\
 -\cancel{3(0)} + 4y = 12 \\
 4y = 12 \\
 \frac{4y}{4} = \frac{12}{4} \\
 \boxed{y = 3} \\
 (0, 3)
 \end{array}$$

Try It

 Complete the following exercise.

1. Find the x-intercept and the y-intercept of the graph of the equation $2x - 5y = 10$.

$$\begin{array}{l}
 \text{x-int} \\
 \underline{y = 0} \\
 2x - 5(\cancel{0}) = 10 \\
 2x = 10 \\
 \frac{2x}{2} = \frac{10}{2} \\
 \text{x} = 5
 \end{array}
 \qquad
 \begin{array}{l}
 \text{y-int} \\
 \underline{x = 0} \\
 \cancel{2}(0) - 5y = 10 \\
 -5y = 10 \\
 \frac{-5y}{-5} = \frac{10}{-5} \\
 y = -2
 \end{array}$$

x-int: $(5, 0)$ y-int: $(0, -2)$

SUMMARY

Making a Quick Graph

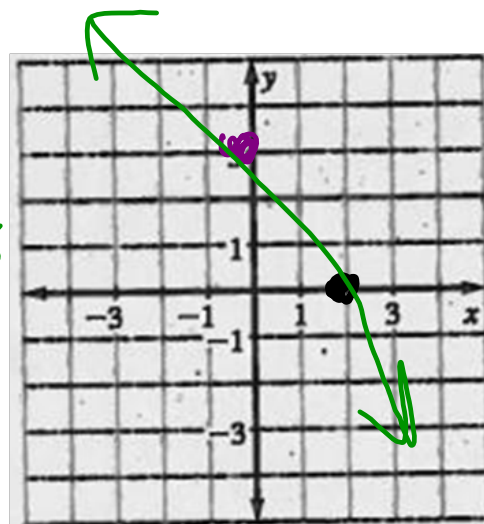
- STEP 1** Find the intercepts.
- STEP 2** Draw a coordinate plane that includes the intercepts.
- STEP 3** Plot the intercepts and draw a line through them.

*Note: The Quick Graph process works because only two points are needed to determine a line.

Example 2: Make a Quick GraphGraph the equation $9x + 6y = 18$.

$$\begin{array}{l} \text{x-int} \\ y=0 \\ \hline 9x + \cancel{6(0)} = 18 \\ 9x = 18 \\ \frac{9x}{9} = \frac{18}{9} \\ \text{x-int } \boxed{x=2} \\ (2, 0) \end{array}$$

$$\begin{array}{l} \text{y-int} \\ x=0 \\ \hline \cancel{9(0)} + 6y = 18 \\ 6y = 18 \\ \frac{6y}{6} = \frac{18}{6} \\ \text{y-int } \boxed{y=3} \\ (0, 3) \end{array}$$

**4.4 Day 1 Homework****Axis Graphing Worksheet**