

Name: _____ Hour: _____ Date: _____

NOTES: Section 2.3 – Graph Equations of Lines

Goals: #1 – I can graph linear equations from slope-intercept form.

#2 – I can graph linear equations from standard form.

#3 – I can graph horizontal and vertical lines.



#4 – I can graph linear equations from any form.

Homework: Lesson 2.3 Worksheet

Warm Up:

1. Find the slope of the line passing through the points. Then tell whether the lines *rises, falls, is horizontal* or *is vertical*.

a. $(7, 8), (-8, 8)$

2. Tell whether the lines are *parallel, perpendicular, or neither*.

a. Line 1: through $(-9, 3)$ and $(0, 4)$

Line 2: through $(3, -4)$ and $(2, 5)$

3. A skateboard ramp has a run of 24 feet and a rise of 2 feet. What is the slope of the ramp?

Exploration #1: Work with a partner.

1. What does the *slope-intercept form* of a line mean?

2. What do all the variables represent?

Name: _____ Hour: _____ Date: _____

Notes:

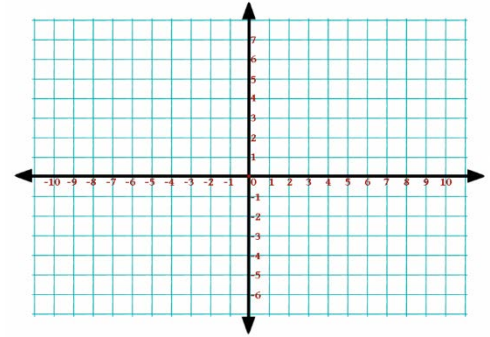
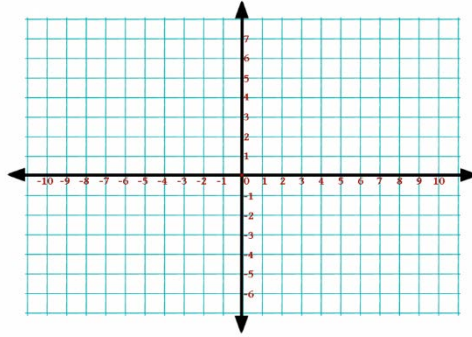
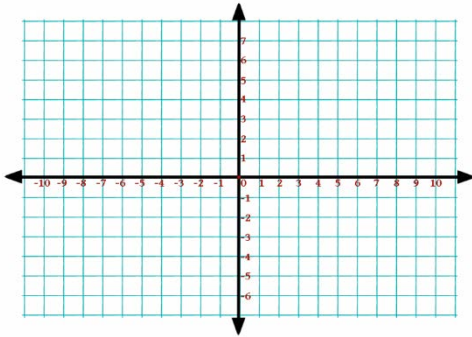
Any linear equation in the form _____ is said to be in slope-intercept form.

Example #1: Graph the following equations:

1. $y = \frac{3}{2}x - 4$

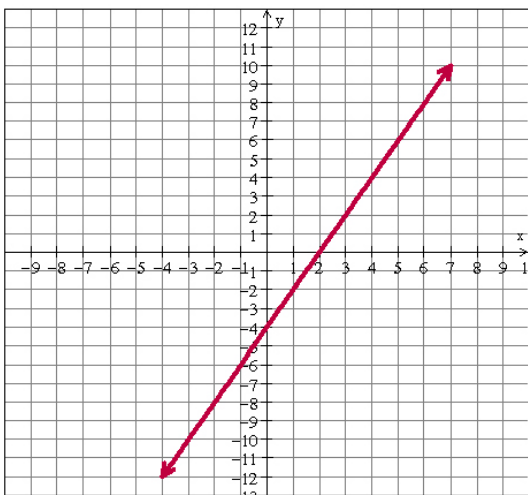
2. $y = x$

3. $y = -x + 2$



Exploration #2: Work with a partner.

1. What do you know about an *x-intercept*?
2. What do you know about a *y-intercept*?
3. What would the *x*- and *y*-intercepts of this graph be? Write as an ordered pair.



x-intercept:

y-intercept:

4. What does the *standard form* of a line mean?

Name: _____ Hour: _____ Date: _____

Notes:

The _____ is the point where a graph intersects the x -axis. The y value for the x -intercept is always _____.

The _____ is the point where a graph intersects the y -axis. The x value for the y -intercept is always _____.

Any linear equation in the form _____ is said to be in standard form.

Example #2: Find the x - and y -intercepts of the line with the given equation. Write your intercepts as ordered pairs.

1. $x - y = 3$

2. $2x + 4y = 16$

x -intercept: _____

x -intercept: _____

y -intercept: _____

y -intercept: _____

Example #3: Graph the following equations using its x - and y -intercepts. Write your intercepts as ordered pairs.

1. $3x - 6y = 12$

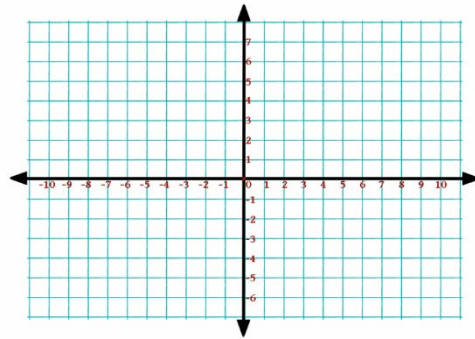
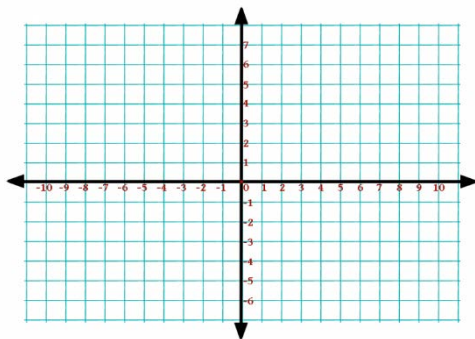
2. $-x - y = 7$

x -intercept: _____

x -intercept: _____

y -intercept: _____

y -intercept: _____



CHALLENGE: Try and come up with different methods to graph those same equations.

Name: _____ Hour: _____ Date: _____

Exploration #3: Work with a partner.

1. Draw some *vertical* lines. How could you model this line?

2. Draw some *horizontal* line. How could you model this line?

CHALLENGE: What are the slopes of the lines you drew?

Notes:

Equations of vertical lines are written as: _____.

Picture:

Equations of horizontal lines are written as: _____.

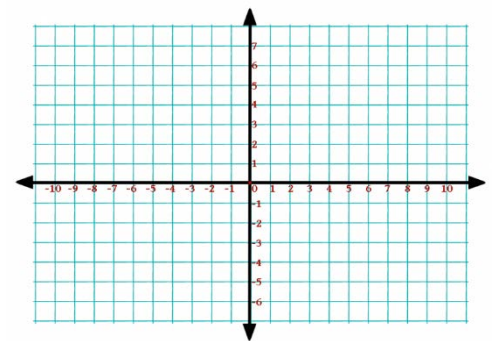
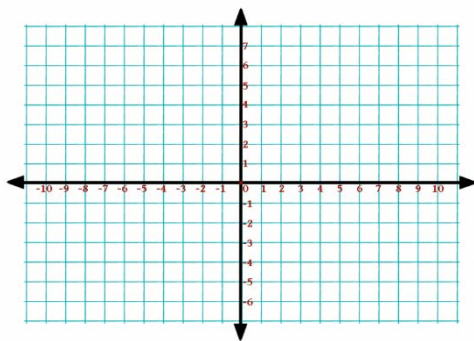
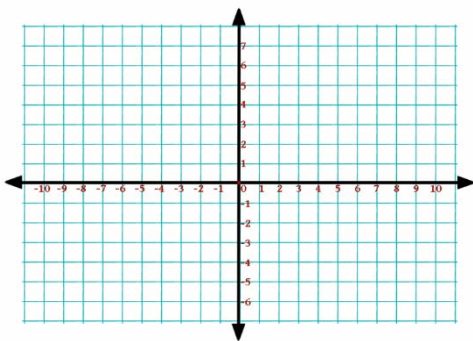
Picture:

Example #4: Graph the following lines using any method.

1. $y = -5$

2. $7x = 21$

3. $4x = -15 - 3y$



Example #5: Rewrite the equations in the form that we could use to graph the line. You DO NOT need to graph the line.

1. $-4x = 3y + 24$

2. $-8y = 2x + 11$