Name:_____ Hour: _____ Date: _____

NOTES: Section 4.5 – The Slope of a Line

Goals: #1 – I can describe what slope means.

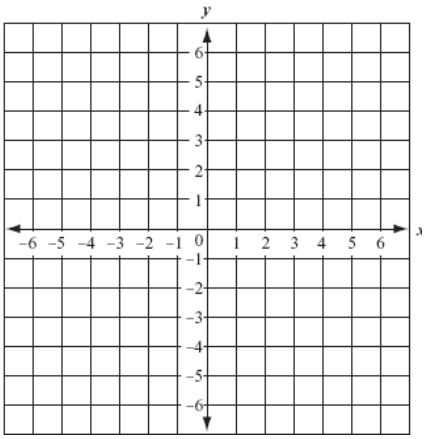
#2 – I can find the slope of a line.



Homework: Section 4.5 Worksheet

Warm Up:

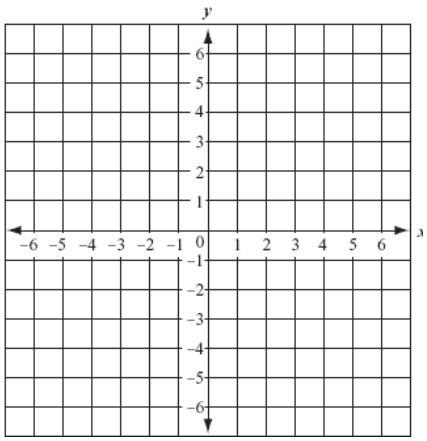
1. Graph the equation $x = -3$.



2. Find the x- and y-intercepts and graph $-3x - 5y = -15$

x-intercept: _____

y-intercept: _____



Exploration #1: Work with a partner.

1. Plot the following points:

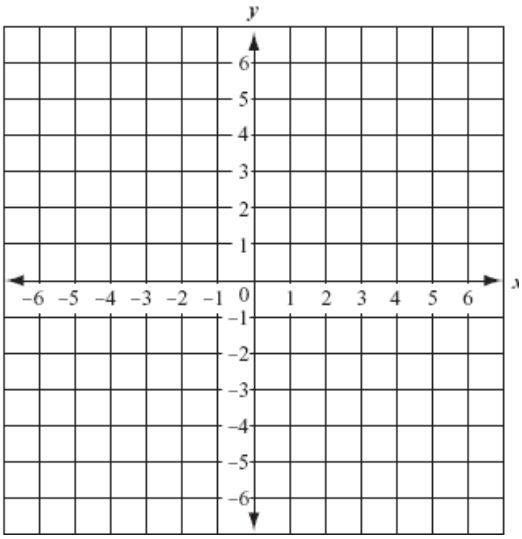
Point A: $(-2, 3)$

Point B: $(5, 6)$

Point C: $(-4, -1)$

Point D: $(4, -2)$

Point E: $(0, 3)$



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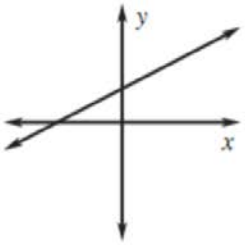
Notes:

Between any 2 points on a coordinate grid, there is exactly one _____ that can be drawn.

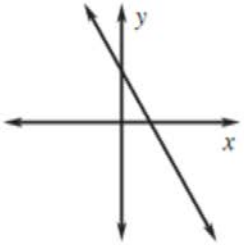
_____ is a number we use to describe _____ and _____ of a line.

- **Direction:**

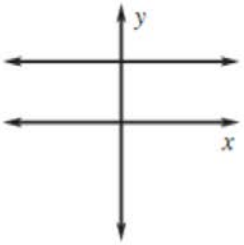
A



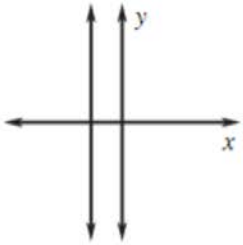
B



C



D



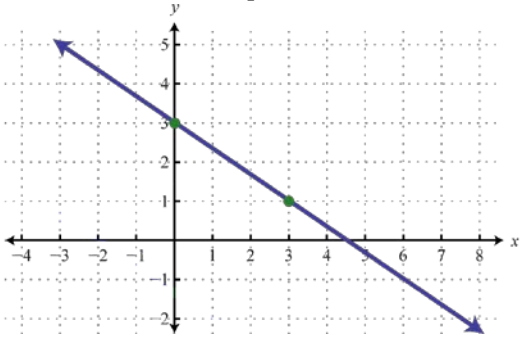
- **Steepness:**

  A ratio of a line's _____ *rise* and _____ *run*.

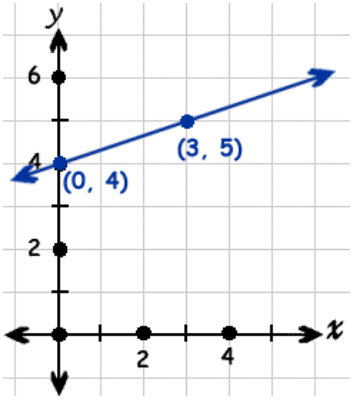
$$\text{slope} = \frac{\text{rise}}{\text{run}}$$

Example #1: Find the slope of the line.

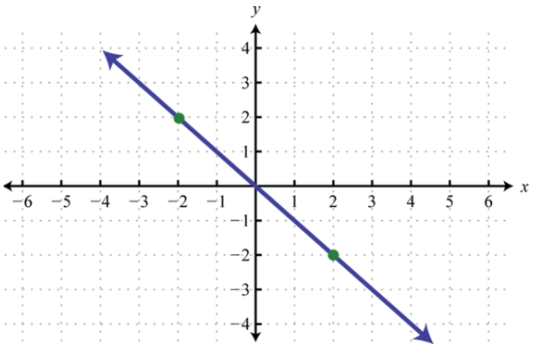
a.



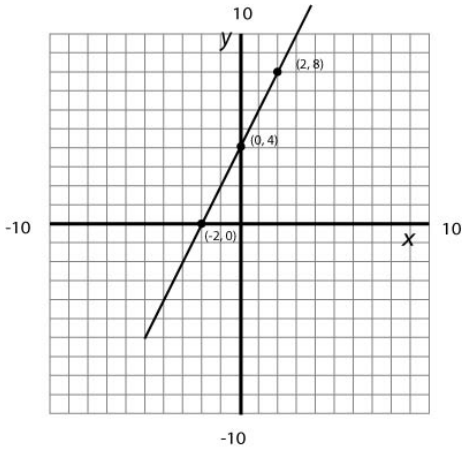
b.



c.



d.



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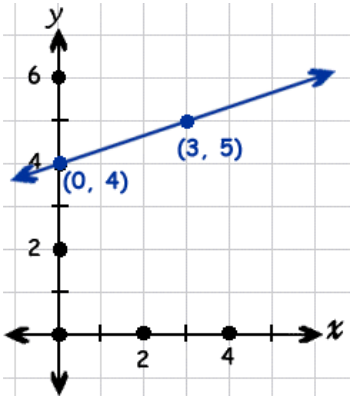
Exploration #2: Work with a partner and follow each step.

a. Find the slope of the line below.



b. What is the *difference* of the labeled x-coordinates?

c. What is the *difference* of the labeled y-coordinates?

d. How could this relate to the *slope* of this line?

e. Can you model this in formula?

Notes:

When given two ordered pairs, we can use a formula to find the _____ of the line.

$$(x_1, y_1) \quad (x_2, y_2)$$

$$\text{slope} = \frac{\qquad\qquad}{\qquad\qquad} = \frac{\qquad\qquad}{\qquad\qquad}$$

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Example #2: Find the slope of the line that passes through the following points.

a. $(0, 3)$ and $(6, 1)$

b. $(-2, 1)$ and $(1, -3)$

c. $(1, 0)$ and $(3, 4)$

d. $(5, -1)$ and $(5, 3)$

e. $(1, 2)$ and $(5, 2)$

f. $(2, 7)$ and $(1, 3)$