

Chapter 3 - Linear Equations and Functions

3.3 Objective: To find the **slope** of a line
To **graph** a line given its **slope** and a **point** on it.

Agenda

- 1) In groups- answer HW questions (5 min)
- 2) Do Now (10 min)
 - in groups
 - on board

last night's HW
HW: p. 111 #5, 9, 15, 19, 21, 23
- 3) Discover Slope of equations in **Standard Form** (10 min)
 - in groups
 - on board
- 4) Discover Slope of **Horizontal & Vertical Lines**(10 min)
 - in groups
 - on board
- 5) Finding Slope from 2 points (10 min)
- 6) Practice Problems

HW p. 116 #1, 5, 7, 13, 23, 39, 43

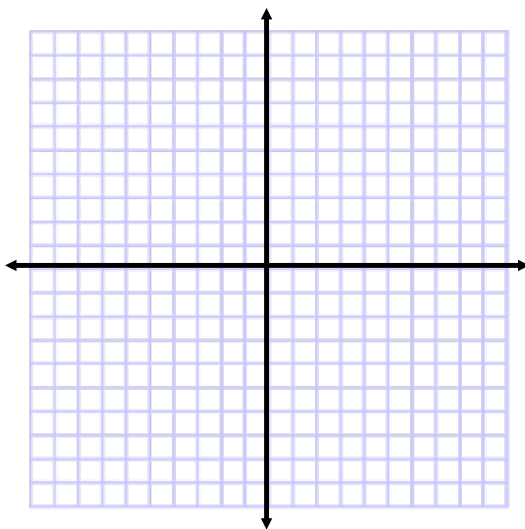
****Check answers in back. MUST SHOW CHECKS FOR FULL CREDIT**

Chapter 3 - Linear Equations and Functions

3.3 Objective: To find the **slope** of a line
To **graph** a line given its **slope** and a **point** on it.

Do NOW

Graph using intercepts: $2x - 8y = -16$



x	y

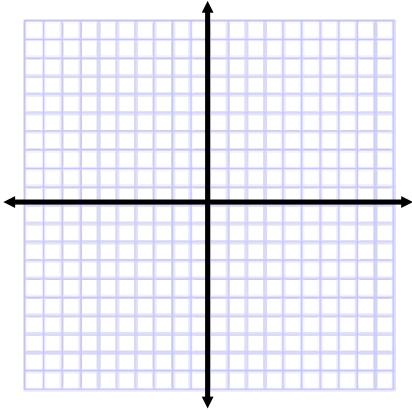
If **slope** can be represented as...

$$\text{Steepness} = \frac{\text{rise}}{\text{run}} = \frac{\text{change } \uparrow}{\text{change } \rightarrow} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

... What is the slope of the equation above?

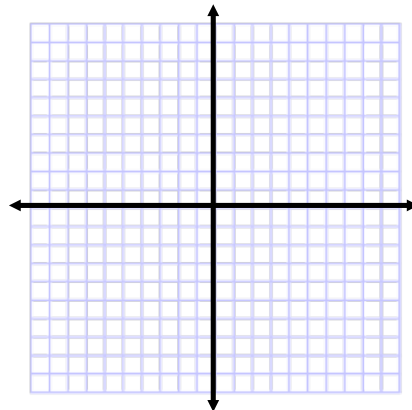
Graph using intercepts. What is the slope?

1) $3x - 2y = 12$



$$\text{slope} = \frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$$

2) $5x + 4y = 40$



$$\text{slope} = \frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$$

3) $5x + 6y = 10$ <----- Based on the problems above, can you **estimate** what the slope of this formula is?

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$$

So we can generalize the **slope** for any equation in **Standard Form** $Ax + By = C$ to be:

Horizontal & Vertical Lines

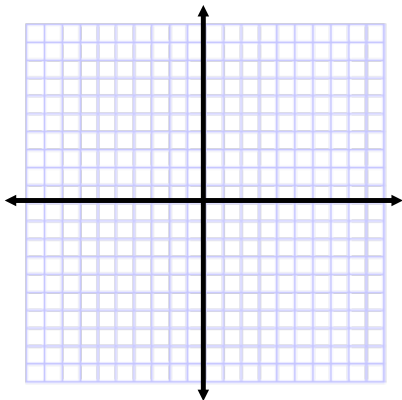
Graph on the same set of axis. What is the slope?

Horizontal Lines:

1) $y = -3$

2) $y = 5$

3) $y = -8$



1) slope = $\frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$

2) slope = $\frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$

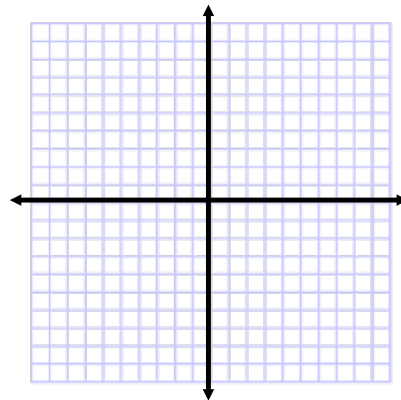
3) slope = $\frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$

Vertical Lines:

1) $x = 7$

2) $x = 4$

3) $x = -1$



1) slope = $\frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$

2) slope = $\frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$

3) slope = $\frac{\text{rise}}{\text{run}} = \underline{\hspace{2cm}}$

So...what can you conclude about the following?

Horizontal Lines
have slope of .

Vertical Lines
have .

Finding slope from 2 points.

$$\frac{\text{Change in } y}{\text{Change in } x} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

a)

x	y
3	6
9	10
12	12

slope = _____ = _____

b)

x	y
2	330
5	600

slope = _____ = _____

c)

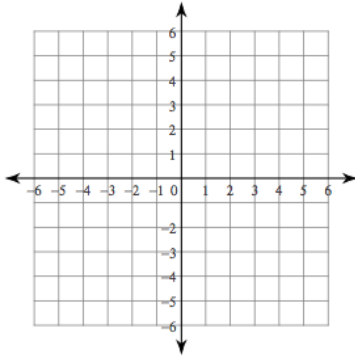
x	y
-2	330
5	150

slope = _____ = _____

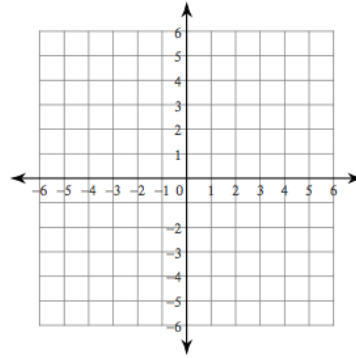
Practice Problems

Sketch the graph of each line.

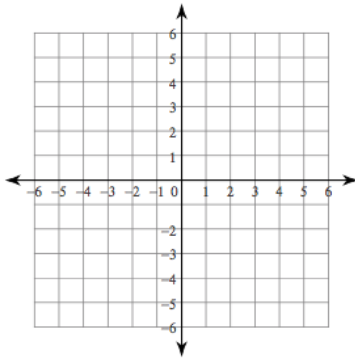
1) $x + y = -4$



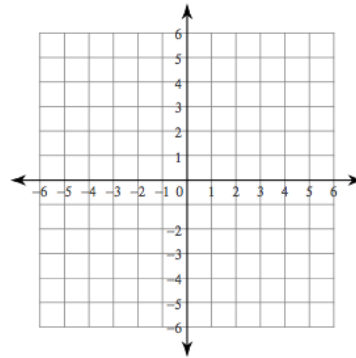
2) $x - y = -2$



3) $2x + y = 1$



4) $2x + y = 4$



Find the slope of the line through each pair of points.

1) $(19, -16), (-7, -15)$

2) $(1, -19), (-2, -7)$

3) $(-4, 7), (-6, -4)$

4) $(20, 8), (9, 16)$

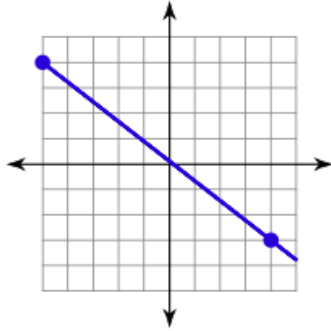
5) $(17, -13), (17, 8)$

6) $(19, 3), (20, 3)$

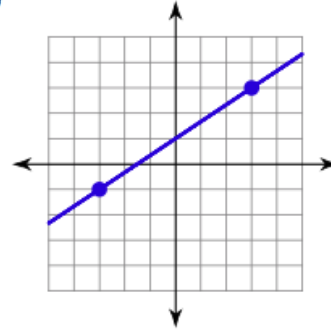
Worksheet on Slope

Find the slope of each line.

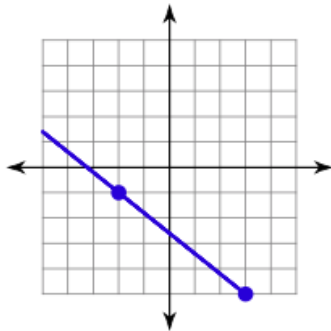
1)



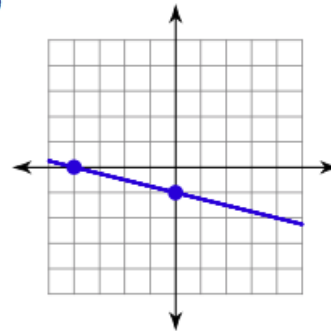
2)



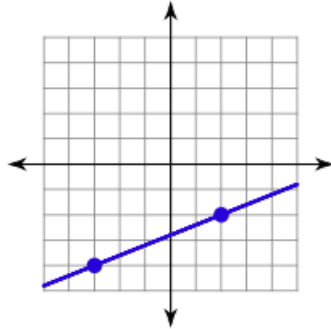
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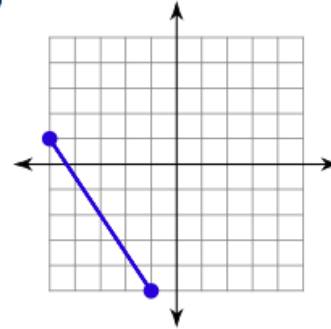
4)



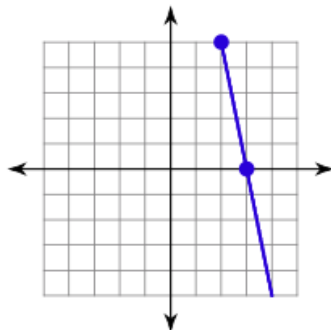
5)



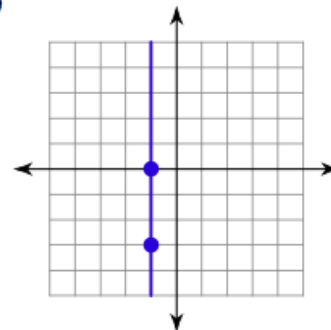
6)



7)



8)



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