7th Grade
May 10, 2021

Today we will:

-Turn in graded assignment (7R)

-Review functions

HOMEWORK:

Study for retake on Wednesday:

-watch and rewatch videos
-look at what you missed on first test (you got it back in Thursday folder)
-review examples we did in class, especially today's packet
-go over what you missed in old homework

ALEKS time and topics due TONIGHT at 11:59PM

Functions

A function matches one y with __exactly__ one x.

This means the x's cannot __repeat__ !

The graph of a function must pass the __vertical__ __line__ __test__ .

7th Grade

9

Math 10 C   Worksheet   Relations & Functions   Ch 5   Name _____

Are these functions? Write Yes or No.

I. Determine the domain and range for each of the following. Which are **NOT** functions?
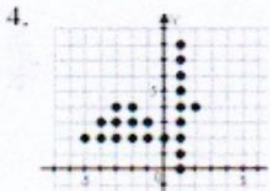
1. {(6, −3), (7, 4), (−7, −2), (0, −2)}
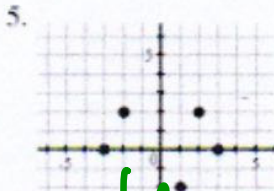
    yes,

2. {(7, 1), (7, −3), (7, 4)}   no

3. { … (−3, 2), (−2, 1), (−1, 0), (0, 1), (1, 2), (2, 3) … }

4.   **No**

5.   **No**   **Yes**

6.   **Yes** *yes*

7.   *yes*

8.

9.
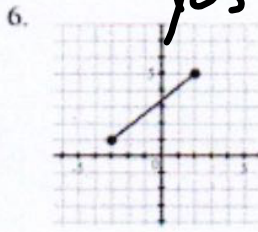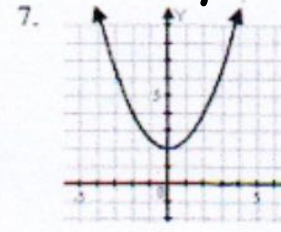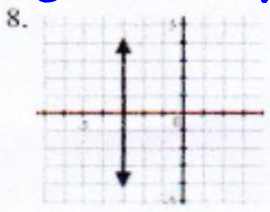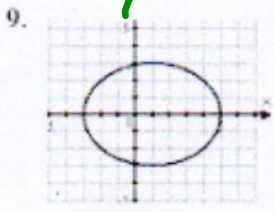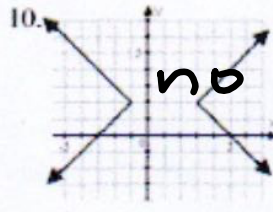
10.   *no*
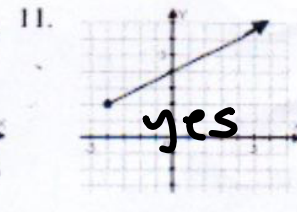
11.   *yes*
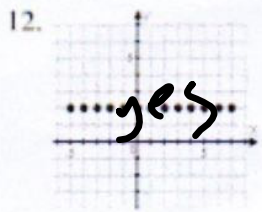
12.   *yes*
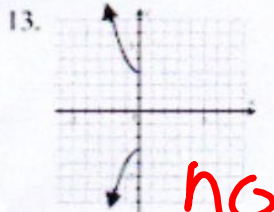
13.   **no**
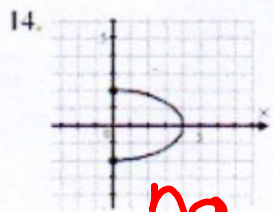
14.   **no**
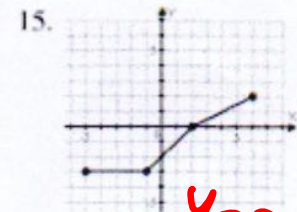
15.   **Yes**
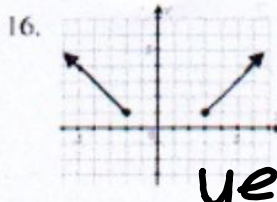
16.   **yes**
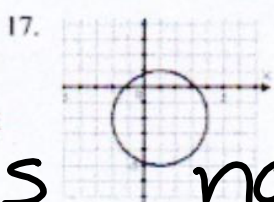
17.   **no**
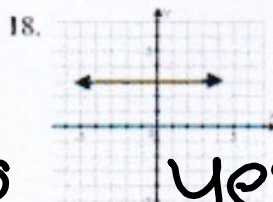
18.   **yes**
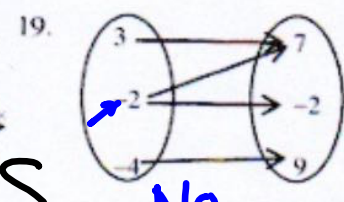
19.   **No**

20.

X	Y
2	1
3	5
4	9
2	13

No

To find four solutions to a function, you must choose any four __X's__ and find their __y's__ using the function __rule__.

Solutions to a function should be written as __ordered__ __pairs__, which can then be graphed to make a line of ALL solutions.

Find 4 solutions to the function. Then graph the function.

$y = x - 3$ 2   -1

3	0
4	1
5	2
6	3
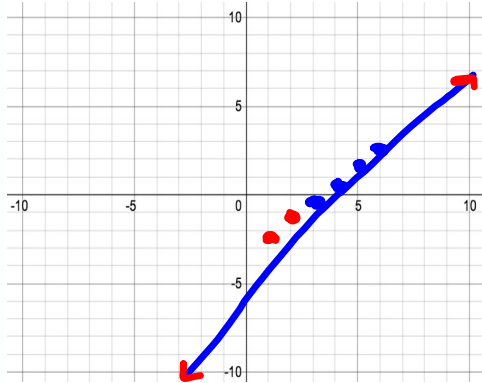
$y = 4x + 1$
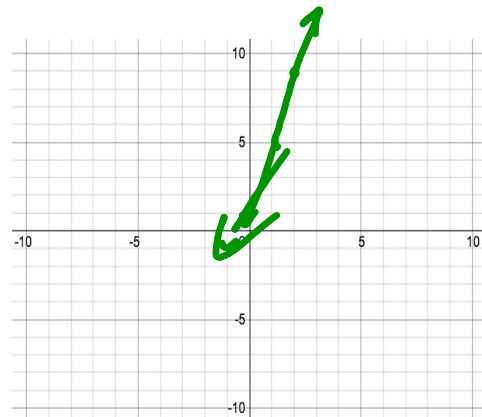
X	Y
0	1
1	5
2	9
3	13

$y = -2x - 2$

X	Y
1	-4
2	-6
3	-8
4	-10
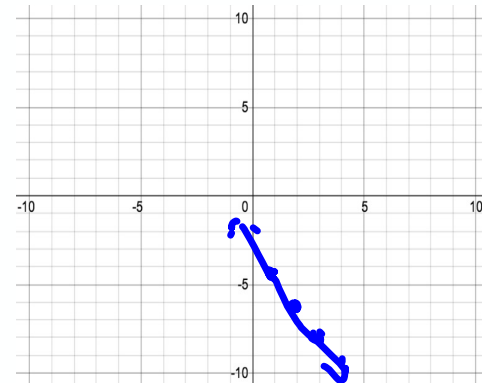
$3x - y = 8$

X	Y
1	3 - (-5) = 8
2	6 - (-2) = 8
3	9 - 1 = 8
4	12 - 4 = 8
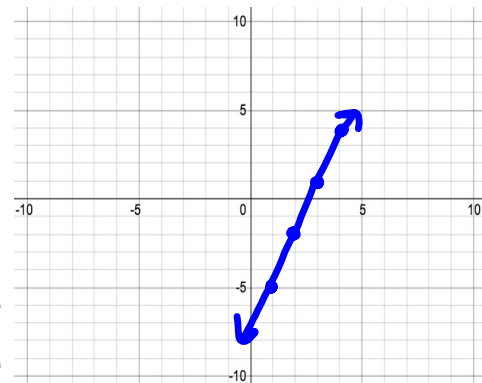
Slope

Slope measures the __Steepness__ of a line on a graph.

To find slope we can do one of two things:

If you have two ordered pairs, you make a fraction with the difference in __y's__ over the difference in __x's__. It looks like this:

$$\frac{y_2 - y_1}{x_2 - x_1} \text{ or } \frac{\Delta y}{\Delta x}$$

If you have a graph, you just find __rise__ over __run__ by counting. This means write how much the line goes __up (down)__ over how much the lines moves __over__.

Slope is usually written as a __fraction__.

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

$L(-1, 2)$, $M(0, 5)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 2}{0 - (-1)} = \frac{3}{1} = 3$$

$D(4, 5)$, $E(-3, -9)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-9 + 5}{-3 + 1} = \frac{-14}{-7} = 2$$

Kuta Software - Infinite Pre-Algebra

Name_____

Slope
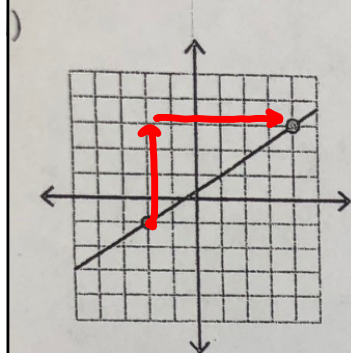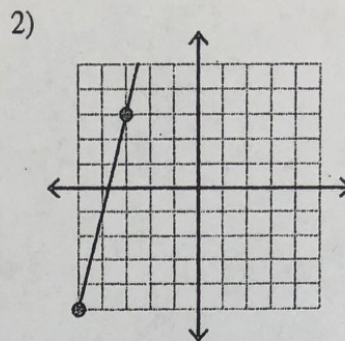
$$m = \frac{rise}{run}$$

Date_____ Period_____

Find the slope of each line.

1)

$$m = \frac{4}{6} = \frac{2}{3}$$

2)

$$m = \frac{8}{2} = \frac{4}{1}$$

3)

$$m = \frac{-6}{4} = \frac{-3}{2}$$

4)

$$m = \frac{2}{8} = \frac{1}{4}$$
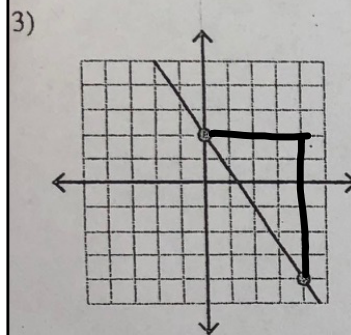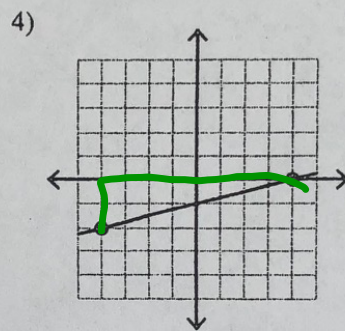
Direct Variations

The graph for a direct variation must be a
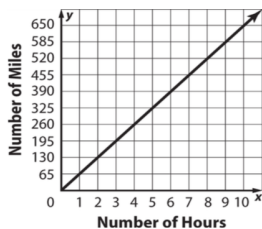__line__ that goes __through__ __the__
__origin__ .

The equation for a direct variation looks like
__$y = mx$__ . $y = 2x$ $y = -5x$
$y = \frac{1}{4}x$

In the equation for a direct variation, the "m"
stands for the __slope__ of the line, the
__constant__ of variation, or the __unit__ __rate__ .

Examples:

Are these direct variations?

Number of Miles vs **Number of Hours**

yes

Revenue ($) vs **Glasses of Iced Tea Sold**
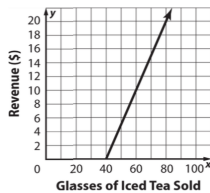
No

yes
$y = 9.50x$ $y = 0.10x + 45$

No

Lee works at a job where her pay varies directly with the number of hours she works. Her pay for 6 hours is $48.

a. Write a direct variation equation relating Lee's pay *y* to the hours worked *x*.

$y = 8x$

$y = mx$
↖ unit rate

b. Find her pay if she works 25 hours in a week.

$y = 8 \times 25 = \$200$

c. What is Lee's unit rate? $\$8$

Slope Intercept Form

The slope-intercept form for a function looks like this: $y = mx + b$

m represents the _slope_.

b represents the _y intercept_.
This is where the line crosses the
y-axis.

If an equation is NOT in slope-intercept form, add or subtract the x-term from each side to get _y_ by itself. This will put the equation in slope-intercept form.

LINEAR EQUATIONS #1A

OBJECTIVE:
- Identify the slope and y-intercept in the equation of a line written in slope-intercept form.

Directions: For each equation below, make a blue circle around the y-intercept and a red box around the slope.

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

2. $y = -\dfrac{4}{3}x + 6$

3. $y = 3x + 9$

4. $y = -2 - \dfrac{4}{3}$

5. $y = \dfrac{4}{5}x - 1$

6. $y = \dfrac{3}{2}x + 3$

7. $y = x - 4$

8. $y = \dfrac{1}{3}x + 0$

9. $y = -\dfrac{2}{3}x + 7$

10. $y = \dfrac{5}{3}x - 2$

OBJECTIVE:
- Identify the slope and y-intercept in the equation of a line written in slope-intercept form.

Directions: For each equation below, write the slope of the line as a fraction and the y-intercept as an integer.

1. $y = \dfrac{1}{3}x + 4$ y-intercept __4__   slope __$\frac{1}{3}$__

2. $y = -\dfrac{3}{5}x - 2$ y-intercept __-2__   slope __$-\frac{3}{5}$__

3. $y = 4x + 1$ y-intercept __1__   slope __4__

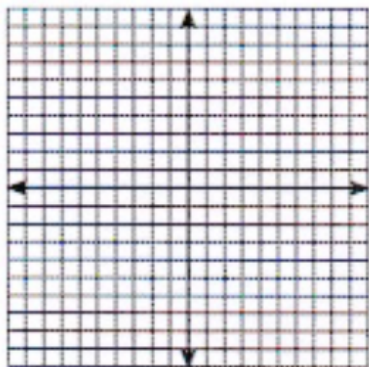4. $y = -\dfrac{3}{2}x + 3$ y-intercept __3__   slope __$-\frac{3}{2}$__

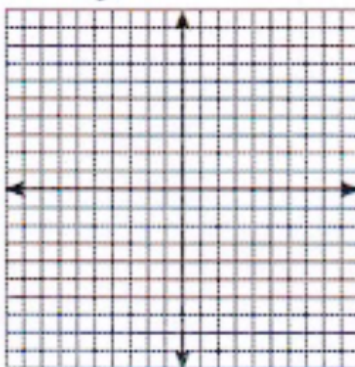5. $y = x + 4$ y-intercept __4__   slope __1__

One more example:

Find slope and y-intercept for the equation 5x + y = 4
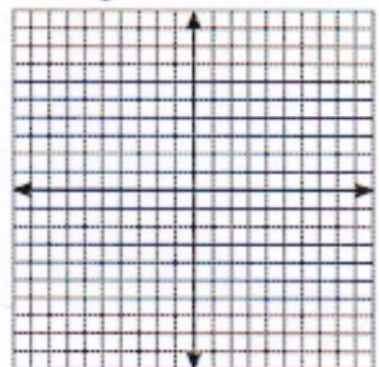
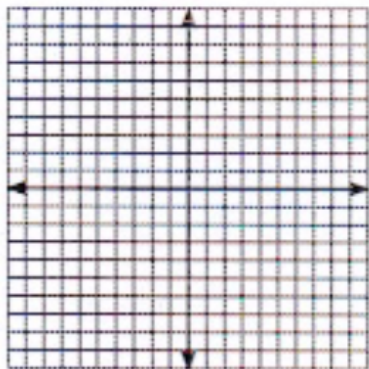Graph the line using slope-intercept form.

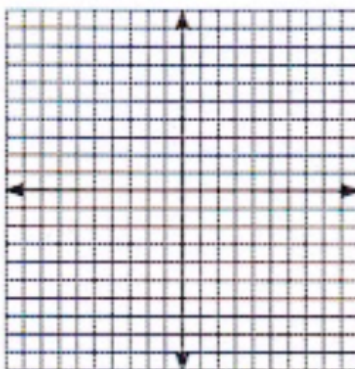1. $y = \frac{1}{2}x - 1$

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

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

2. $y = 2x + 5$

4. $y = -3x - 1$

6. $y = x + 3$

Welcome to our class

IN THIS CLASSROOM
WE DON'T
give up,
BUT WE DO
give our
best effort

HARD
WORK
PAYS
OFF

WELCOME

7th Grade
Homework

ALEKS time and topics due TONIGHT

Study for retest on WEDNESDAY