May 11, 2021

7th Grade
May 11, 2021

Today we will:

-Complete packet

-Review functions on white boards

HOMEWORK:

Study for retake TOMORROW

-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 Monday night 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

Math 10C Worksheet Relations & Functions Ch 9 Name _____

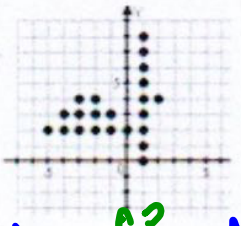
Are these functions? Write Yes or No.

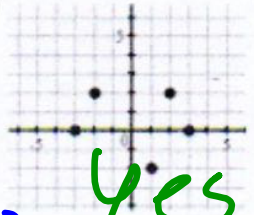
I. Determine the domain and range for each of the following. Which are NOT functions?

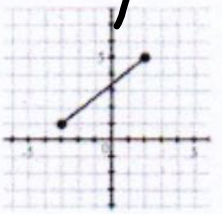
1. $\{(6, -3), (7, 4), (-7, -2), (0, -2)\}$ yes

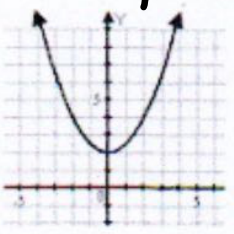
2. $\{(7, 1), (7, -3), (7, 4)\}$ no

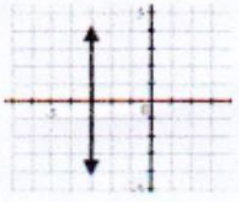
3. $\{\ldots(-3, 2), (-2, 1), (-1, 0), (0, 1), (1, 2), (2, 3)\ldots\}$ Yes

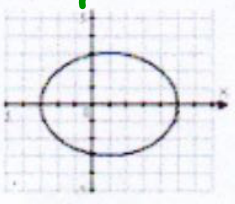
4.  No

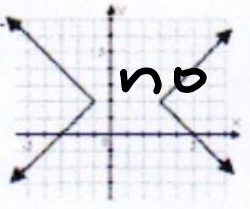
5.  No

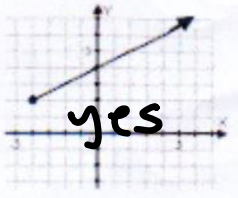
6.  yes

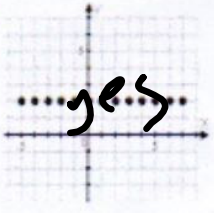
7.  yes

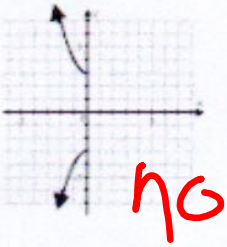
8. 

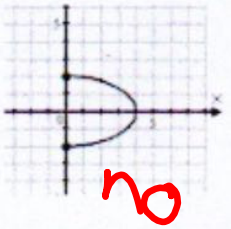
9.  yes

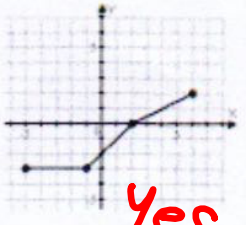
10.  no

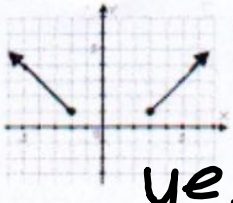
11.  yes

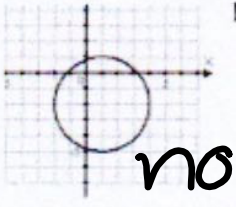
12.  yes

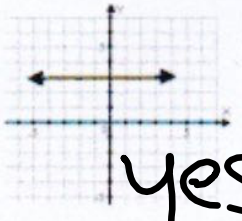
13.  no

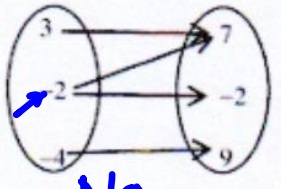
14.  no

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.

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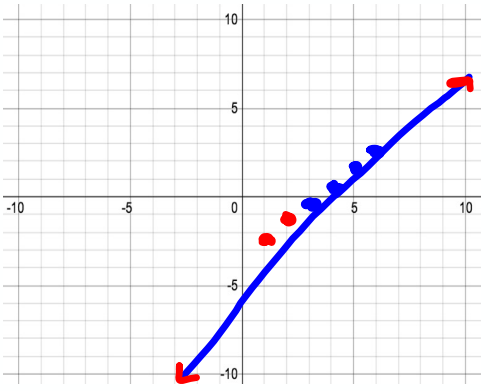
Find 4 solutions to the function. Then graph the function.

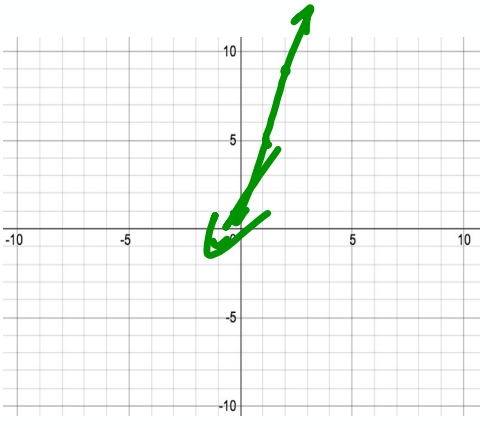
$y = x - 3$

x	y
3	0
4	1
5	2
6	3



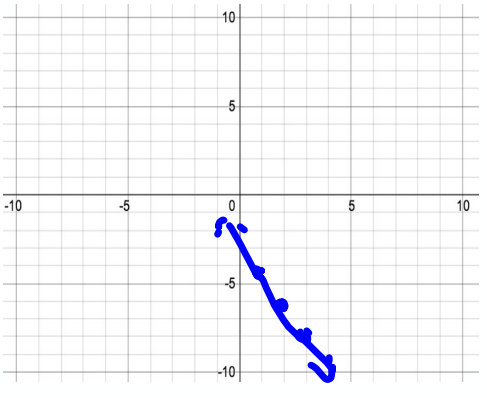
$y = 4x + 1$

x	y
0	1
1	5
2	9
3	13



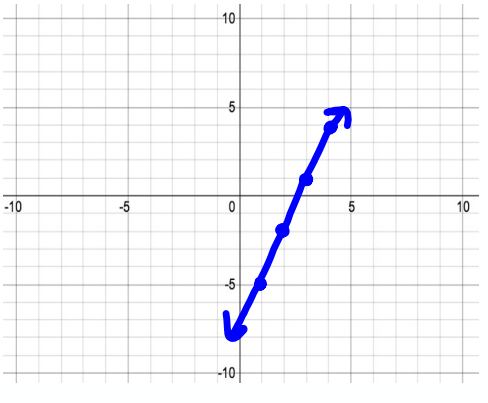
$y = -2x - 2$

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.

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

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

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

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-9-5}{-3-4} = \frac{-14}{-7} = 2$$

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Name_____

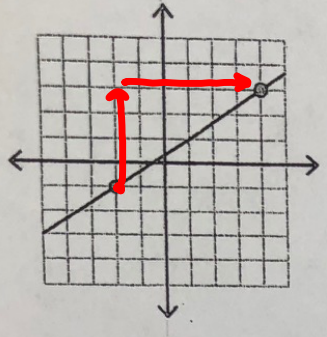
Slope

Date_____ Period____

Find the slope of each line.

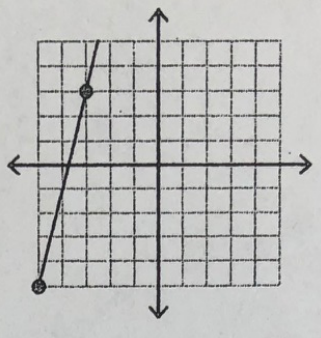
$m = \frac{\text{rise}}{\text{run}}$

1)



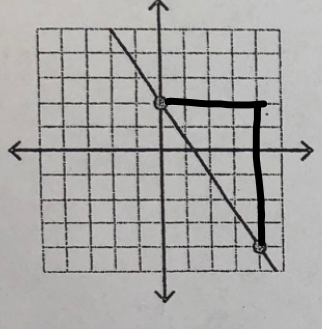
$m = \frac{4}{6} = \frac{2}{3}$

2)



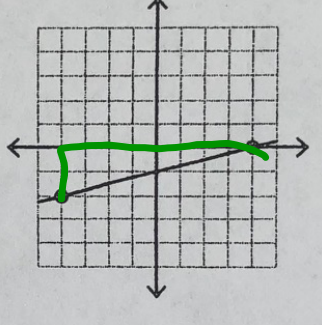
$m = \frac{8}{2} = \frac{4}{1}$

3)



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

4)



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

Direct Variations

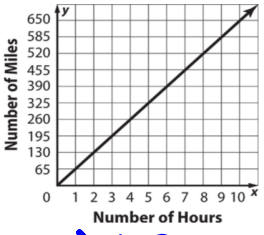
The graph for a direct variation must be a line that goes through the origin.

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

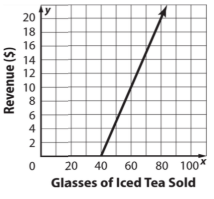
In the equation for a direct variation, the "m" stands for the slope of the line, the constant of variation, or the unit rate.

Examples:

Are these direct variations?



yes



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 x 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. $y = \frac{1}{2}x - 3$
2. $y = -\frac{4}{3}x + 6$
3. $y = 3x + 9$
4. $y = -2x - \frac{4}{3}$
5. $y = \frac{4}{5}x - 1$
6. $y = \frac{3}{2}x + 3$
7. $y = x - 4$
8. $y = \frac{1}{3}x + 0$
9. $y = -\frac{2}{3}x + 7$
10. $y = \frac{5}{3}x - 2$

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. $y = \frac{1}{3}x + 4$ y-intercept 4 slope $\frac{1}{3}$
2. $y = -\frac{3}{5}x - 2$ y-intercept -2 slope $-\frac{3}{5}$
3. $y = 4x + 1$ y-intercept 1 slope 4
4. $y = -\frac{3}{2}x + 3$ 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 $5x + y = 4$

$-5x \quad -5x$

$y = -5x + 4$

$y = mx + b$

$m = -5$

$b = 4$

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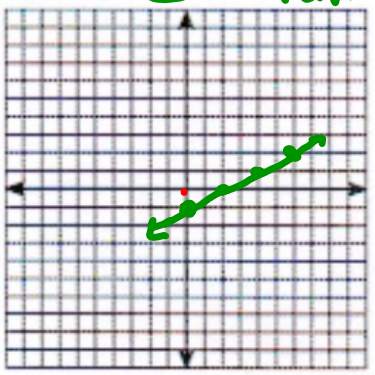
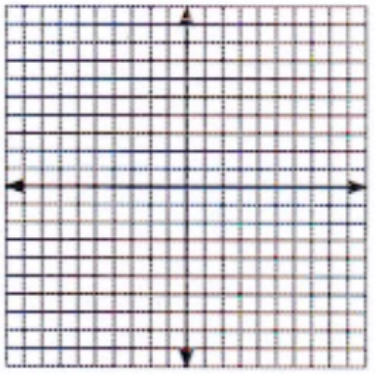
Graph the line using slope-intercept form.

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

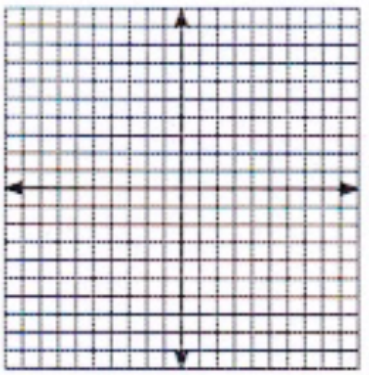


2. $y = 2x + 5$

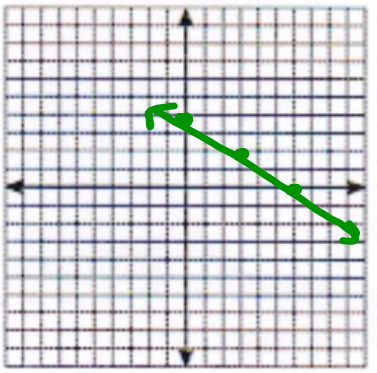


3. $y = -\frac{1}{3}x + 2$

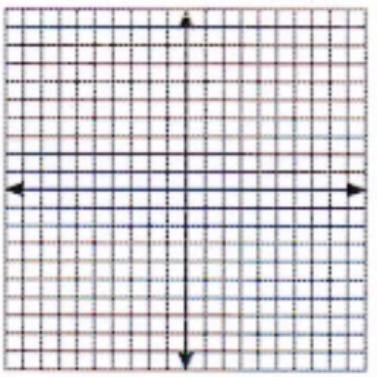
4. $y = -3x - 1$



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



6. $y = x + 3$



White board examples:

Find 4 solutions

$y = 3x + 2$

(0, 2)

(1, 5)

(2, 8)

(3, 11)

(4, 14)

Find slope.

$(-2, 3)$ $(-3, 5)$

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

$$= -2$$

Find slope.

$(-5, 7)(3, -3)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 + -7}{3 + (+5)} = \frac{-10}{8}$$

$$\frac{7 - (-3)}{-5 + -3} = \frac{10}{-8}$$

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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
Study for retest TOMORROW
ALEKS time and topics due Monday