TH-A1 Algebra 1 Week 28 4/24

1.) Find k

2.) Find $y = kx$

1.) (4, 9) and (12, y)

*3 and 9*3=27

x

$y = kx$

$k = \frac{y}{x} = \frac{9}{4}$

$y = \frac{9}{4}x$

$y = \frac{9}{4}(12) = 27$

2.) (2, 6) and (x, 27)

2*4.5=9 and *4.5

$k = \frac{y}{x} = \frac{6}{2} = 3$

$y = kx$

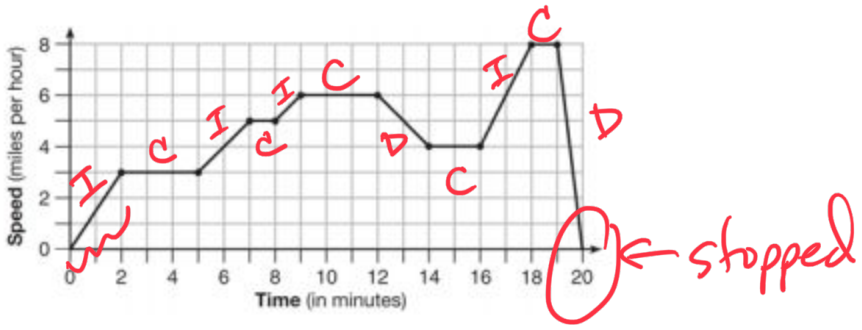
$y = 3x$

$\frac{27}{3} = \frac{3x}{3}$

$9 = x$

Algebra 1 Chapter 5 Pre-Test

1.) (2.5 pts each, 10 pts total) (5-1) The graph below represents Arlene's speed during her 20-minute jog around her neighborhood. Use the graph to answer the following questions.



a) During which intervals was Arlene's speed increasing?

0→2, 5→7, 8-9, 16-18

b) During which intervals was Arlene's speed decreasing?

12-14, 19-20

c) During which intervals was Arlene's speed constant?

2-5, 7-8, 9-12, 14-16, 18-19

d) What time(s) did Arlene stop?

20

2.) (5 pts total) (5-2) Find the domain and range of each relation.

a) {(-2,7), (-1,4), (0,9), (3,2)}

(x,y) (x,y)

Domain: (x)

{-2, -1, 0, 3}

Range: (y)

{7, 4, 9, 2}

3.) (5 pts each, 10 pts total) (5-2) Determine whether each relation is a function.

a) {(-8,4), (-4,4), (-1,2), (7,2)}

-8 -4 -1 7 function

b) {(-6,3), (-5,-9), (-5,0), (-2,3)}

not function

-5 → -9
-5 → 0

4.) (10 pts each, 20 pts total) (5-3) Use a table to graph each of the following functions.

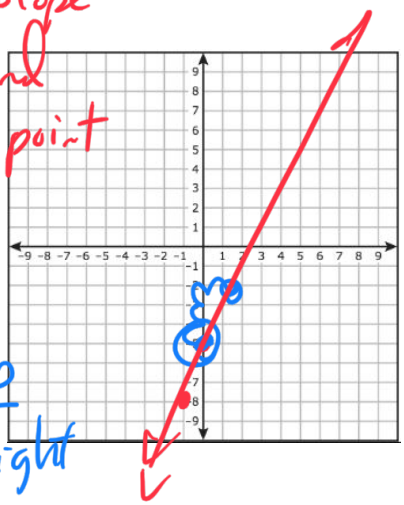
a) $y = 3x - 5$ y-int, slope

x	y = 3x - 5	y
-2	3(-2)-5 =	-11
-1	3(-1)-5 =	-8
0	3(0)-5	-5
1		
2		

(-2,-11)
(-1,-8)
(0,-5)

1.) Plot y-int
2.) Use slope to find next point

slope = 3 = 3 up / 1 right

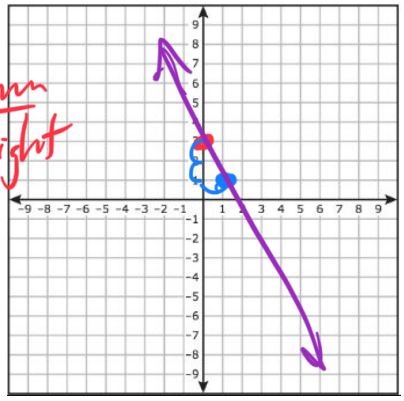


b) $y = -2x + 3$ y-int

x	y = -2x + 3	y
-2		
-1		
0		
1		
2		

1.) Plot y-int
2.) Use slope

slope = -2 = 2 down / 1 right



5.) (5 pts each, 15 pts total) (5-4) Analyze table and write the function rule

x	f(x)
1	4
3	6
7	10
8	11

+3 +3 +3 +3

$x + 3 = y$

$x + 3 = y$ or $x + 3 = f(x)$

+, −, *, ÷

$f(x)$ = "f of x"

function with x being the variable

$f(c) = c + 3$

x	f(x)
0	0
2	7
4	14
10	35

x	f(x)
-4	10
-2	12
1	15
3	17

6.) (5 pts each, 10 pts total) (5-5) For the data in the table, tell whether y varies directly with x. If it does, write an equation for direct variation.

x	f(x)
-3	9
0	0
2	14
8	20

$k = \frac{y}{x}$

$9/-3 = -3$

$14/2 = 7$

Nope

*

By definition (0,0) is direct variation

x	f(x)
-2	4
0	0
3	-6
4	-8

$k = y/x$

$4/-2 = -2$

$-6/3 = -2$

$-8/4 = -2$

$y = kx$

$y = -2x$

yes!

7.) (2.5 pts each, 5 pts total) (5-5) Is each of the following equations an example of direct variation? If so, find the constant of variation.

a) $-3x + 4y = 0$

$-3x + 4y = 0$

$+3x \quad +3x$

$\frac{4y}{4} = \frac{3x}{4}$

$y = \frac{3}{4}x$

yes!

$y = kx$

$k = \frac{3}{4}$

b) $y + 5 = 2x$

$-5 \quad -5$

$y = 2x - 5$

not direct variation

8.) (5 pts each, 10 pts total) (5-5) Each of the following ordered pairs are examples of direct variation. Find each missing value.

a) (3, 8) and (x, 20)

$k = \frac{y}{x} = \frac{8}{3}$

$y = \frac{8}{3}x$

$\frac{3}{8} * \left(\frac{20}{1}\right) = \left(\frac{8}{3}x\right) * \frac{3}{8}$

$\frac{60 \div 4}{8 \div 4} = \frac{15}{2}$

b) (4, y) and (12, -9)

9.) (5 pts each, 15 pts total) (5-6) Find the fifth, tenth, and hundredth terms of each sequence.

n = # of terms

start + difference (n-1)

$6 + 8(n-1)$

a) 6, 14, 22, 30,...

+8 +8 +8

n = 5

5th: $6 + 8(5-1)$

$6 + 8(4) = 6 + 32 = 38$

b) 12, 5, -2, -9,...

-7 -7

$12 - 7(n-1)$

10th: $6 + 8(10-1)$

$6 + 8(9) = 6 + 72 = 78$

c) -18, -23, -28, -33

100th: $6 + 8(100-1)$

$6 + 8(99) = 6 + 792 = 798$