Algebra 1 – WH **name** _____
Warmup – table of values **date** _____ **period** ____

Find the rule for each of the following tables of values:

1.

x	y
1	7
2	9
3	11
4	13
5	15
6	17

(2, 9) (1, 7)

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2}{-1} = 2$

$y - 9 = 2(x - 2)$

$y - 9 = 2x - 4$

$y = 2x + 5$

2.

x	y
-6	0
-4	-1
2	-4
8	-7

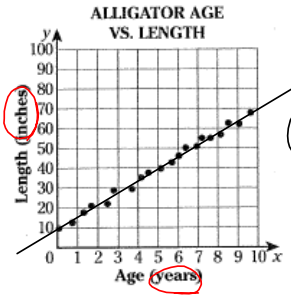
(-6, 0) (-4, -1)

$m = \frac{-1 - 0}{-4 - -6} = \frac{-1}{2}$

$y - 0 = \frac{-1}{2}(x + 6)$

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

4. The scatter plot below shows the age and length of 20 alligators.



(0,10) (10,70)

$m = \frac{60}{10} = 6$

A Draw the line of best fit on the scatter plot above.

B Write an equation that describes the line of best fit.

Answer: $y = 6x + 10$

(2,20) (9,61)

$\frac{41}{7}$

C Explain how you found your equation in **part B.**

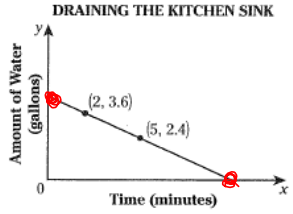
(answers will vary)

I identified two points on the line of best fit. I computed the slope of the line and then use the slope and y-intercept to write the equation.

D Explain the meaning of the slope of the line in this situation.

The slope of $\frac{6''}{1 \text{ year}}$ means that alligators are predicted to grow about 6" each year.

5. A kitchen sink is draining very slowly. The graph shows how the amount of water in the sink is changing over time.



A Find the slope of the line in the graph.

$m = \frac{1.2}{-3} = -0.4 = -\frac{2}{5}$

Answer: -0.4 gallons/min

$y - 2.4 = -0.4(x - 5)$

B Write an equation of the line in point-slope form.

Answer: $y - 3.6 = -0.4(x - 2)$ OR

C Find the x- and y-intercepts of the line.

$x = 0$: $y = -0.4(-2) + 3.6 = 4.4$

$y = 0$: $x = 11$

x	y
0	
	0

Answer: y-int $= 4.4$ and x-int $= 11$

D Explain the meaning of the x- and y-intercepts in this situation.

y-int: When the sink is full ($t = 0$), there is 4.4 g of water in sink.

x-int: At $t = 11$ min the sink is empty.

Write a Linear Function

Directions: Using the whole numbers 1 through 8 [You will use each number only once, except for one number that will be used twice in the same coordinate point. i.e.(1,1), (2,2), (3,3), (4,4), (5,5), (6,6), (7,7) or (8,8)], find three coordinate points that lie on the same line. Write the equation of the line represented by the three points and have the following requirements:

a.) It has a positive slope
b.) The slope is less than one.

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

(4, 5)
(6, 6)
(8, 7)

1 2 3 4 5 6 7 8

First attempt: Points: ____/2 attempt ____/2 explanation

$y = \frac{1}{2}x + 8$ (4, 10)

1 2 3 4 5 6 7 8

What did you learn from this attempt? How will your strategy change on your next attempt?

Second attempt: Points: ____/2 attempt ____/2 explanation

What did you learn from this attempt? How will your strategy change on your next attempt?

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

1, 2

5, 10

7, 14

Linear Function from Table of Values

Directions: Use the numbers 1 through 9, at most one time each, to create a table of values that represent a linear function.

First attempt: Points: ____/2 attempt ____/2 explanation

What did you learn from this attempt? How will your strategy change on your next attempt?

Second attempt: Points: ____/2 attempt ____/2 explanation

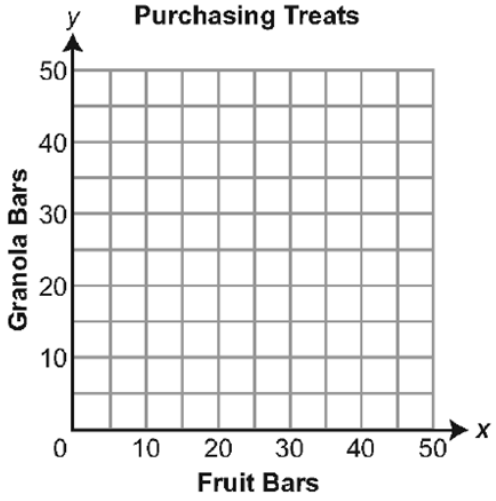
What did you learn from this attempt? How will your strategy change on your next attempt?

Georgia is purchasing treats for her classmates. Georgia can spend exactly $10.00 to purchase 25 fruit bars, each equal in price. Georgia can also spend exactly $10.00 to purchase 40 granola bars, each equal in price.

A. Write an equation which can be used to find all combinations of fruit bars (x) and granola bars (y) that will cost exactly $10.00.

equation: _____

B. Graph the equation from **part A** below.



Continued. Please refer to the previous page for task explanation.

C. What is the slope of the line graphed in **part B**?

slope: _____

D. Explain what the slope from **part C** means in the context of Georgia purchasing treats.