

Pre-Algebra 8: Review Week

May 18 - 22

Time Allotment: 40 minutes per day

Student Name: _____

Teacher Name: Mrs. Hudson

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Zoom Guided Instructions on Tuesdays and Thursdays

4th Period ... 10AM

5th Period ... 11AM

Packet Overview

Date	Objective(s)	Page Number
Monday, May 18	Functions & Slope Review: Be able to identify functions and calculate the slope from linear graphs or given data.	2-5
Tuesday, May 19	Linear Relationships Review: Be able to calculate the slope, y-intercept, and write equations in slope intercept form and graph lines.	6-7
Wednesday, May 20	Linear Equations: Be able to find the intersecting points of two linear equations.	8-11
Thursday, May 21	Review this week's topics *Minor Assessment TOMORROW!!!	12-15
Friday, May 22	*Minor Assessment	16 - 18

Additional Notes:

- ❖ **Materials:** Printed packet or notebook paper; pencils. **CALCULATORS may be used.**
 - **Note:** If you are using notebook paper, be sure to write the pages and numbers of the material.
 - **Example:** P. 4; #6) _____

- ❖ **Minor Assessment on Page 16 – 19**

- ❖ **Answer Key:** Pages 20 - 22

Academic Honesty

I certify that I completed this assignment independently in accordance with the GHNO Academy Honor Code.

Student signature:

I certify that my student completed this assignment independently in accordance with the GHNO Academy Honor Code.

Parent signature:

This week we are going to review Functions and Slope, Linear Relationships, and Linear Equations. This is material that we worked hard to master this year. Understanding these topics will give you more confidence as you begin Algebra I. YES, ALGEBRA I!

Monday, May 18

Lesson: Functions & Slope Review

Objective: Be able to identify functions and calculate the slope from linear graphs or given data.

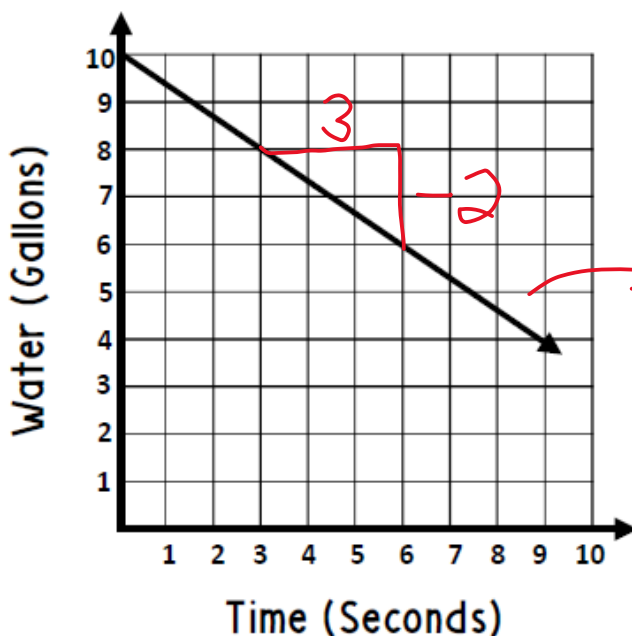
1) The table below shows Vanessa's height in inches for two different years.

YEAR (x)	2000	2005
HEIGHT (y)	48 inches	54 inches

Calculate the slope: _____ $Slope = m = rise/run = \frac{y_2 - y_1}{x_2 - x_1}$

What does the slope mean? _____

2) Ariel is emptying the water from a 10 gallon cooler. The graph shows the water level in the cooler as she empties it. Which best describes the rate of change shown in the graph?



Hint: The "rate of change" is the SLOPE!

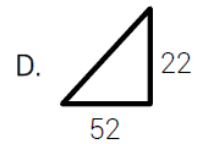
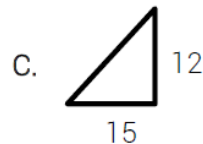
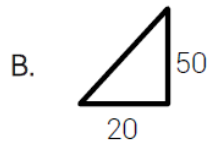
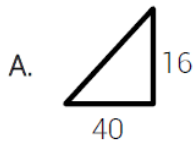
$$m = \frac{\text{Rise} \downarrow}{\text{Run} \leftarrow}$$

Down
so
Negative

Answer: _____

Explain the slope: _____

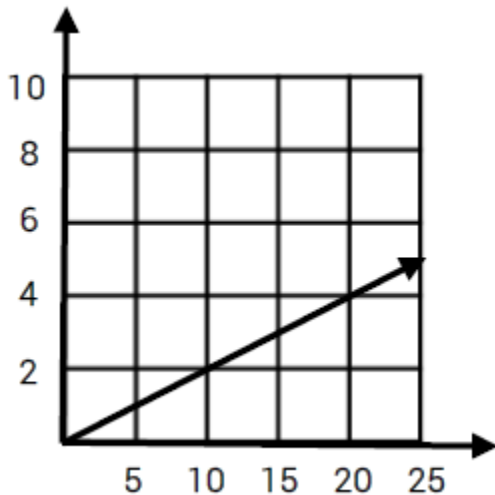
3) The slope of a graphed line is $\frac{2}{5}$. Which of the following triangles could lie on the line? _____



Find the slope of each triangle and reduce the fraction!

A. _____ B. _____ C. _____ D. _____

4) Find the slope of this line. *Be sure to look at how they are counting! The answer is **not 1/2!**

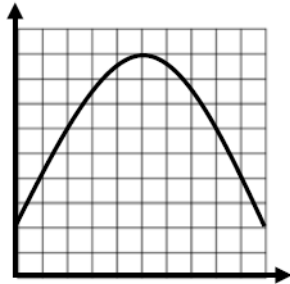


Slope = _____

Which of these explains your answer above:

- F. Asher buys gum for \$0.20 a piece.
- G. A daycare has six workers for every 30 children.
- H. Melanie reads 9 pages of her book every 45 minutes.
- J. Richie earns \$10 every 2 hours to pet sit for his neighbor.

- 5) Which of the following is true about the graph shown below?



- A. The graph is not a function because it does not start at (0, 0).
- B. The graph is a function because it passes the vertical line test.
- C. It is not a function because it is not linear.
- D. It is a function because it has a constant rate of change.

Notes:

A function has **one** y-value for every x-value.

Function:

(1, 2), (2, 2), (3, 2)

Not a function:

(1, 2), (1, 3), (1, 4)

- 6) The following set of ordered pairs represents y as a function of x.

$\{(9, 8), (-2, -14), (6, 2), (-3, -16), (_, _)\}$

Which of the following could be the missing ordered pair?

F. (9, -8)

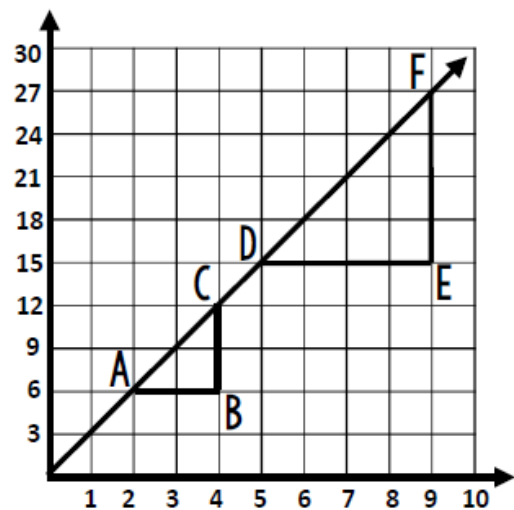
G. (-3, 9)

H. (-9, 8)

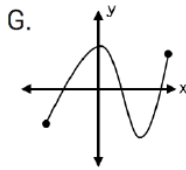
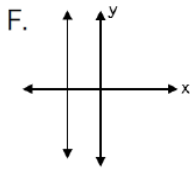
J. (6, -2)

- 7) Are these triangles CONGRUENT or SIMILAR?

Find the slope:



8) Which of the following representations shows y as a function of x ?



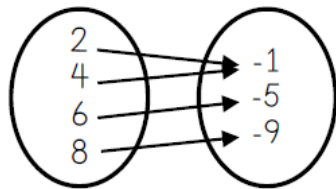
H.

$\{(9, 2), (8, 2), (9, 3), (8, 3)\}$

J.

$\{(0, 4), (1, 6), (2, 8), (0, 9)\}$

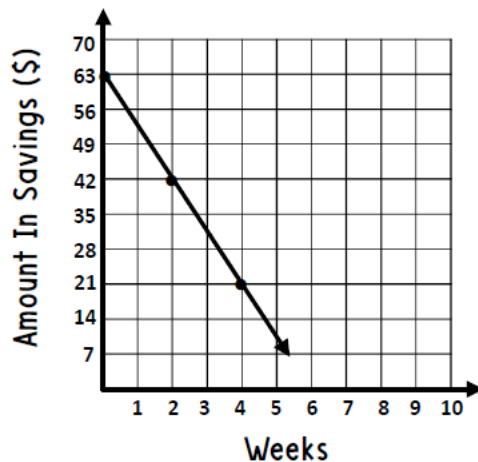
9) Which is true about the mapping shown?



- A. It represents a function because each x -value corresponds to exactly one y -value.
- B. It represents a function because each y -value corresponds to exactly one x -value.
- C. It does not represent a function because each x -value corresponds to exactly one y -value.
- D. It does not represent a function because each y -value does not correspond to exactly one x -value.

10) The graph shows the amount in Harold's savings account over a certain number of weeks. Find the rate of change

Answer: _____



➤ Check your answers in the back.

Tuesday, May 19

Lesson: Linear Relationships Review

Objective: Be able to calculate the slope, y-intercept, and write equations in slope intercept form and graph lines.

1) Using the graph,

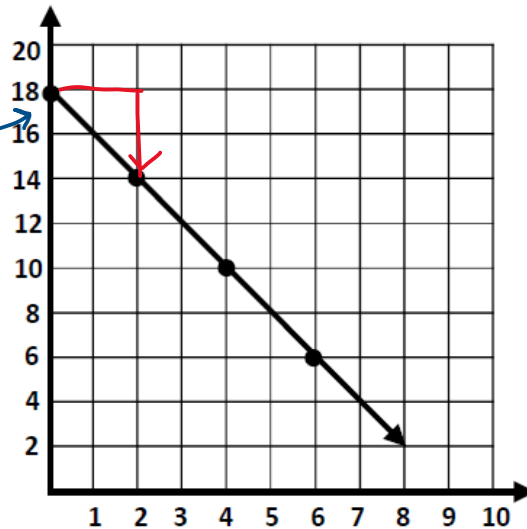
a) Find the SLOPE: _____

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

b) Find the y-intercept (b): _____

c) Write the equation: _____

$$y = mx + b$$



2) The table below shows the amount that a catering company charges based on the number of people at an event.

a) Slope (m): _____

b) y-intercept: _____

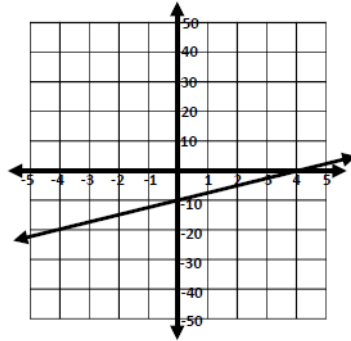
c) Equation: _____

People (p)	Total Charge (c)
25	\$400
50	\$725
75	\$1,050
100	\$1,375

Handwritten annotations: A circled '0' is above the first column. A red arrow labeled '-25' points from the first row to the second row in the first column. A red arrow labeled 'Run +25' points from the first row to the second row in the first column. A red arrow labeled '75 ← b' points to the first row in the second column. A red arrow labeled '-325' points from the first row to the second row in the second column. A red arrow labeled 'rise +325' points from the first row to the second row in the second column.

3) Find the slope and the y-intercept of the linear function shown below.

- a) Slope: _____ (Check what they count by!)
 b) **Y**-intercept: _____
 c) Equation: _____



4) Zane owes his dad money for his cell phone that he lost. So far, Zane has paid his dad \$23, and he will pay his dad an additional \$45 each month until he has repaid him for the phone. Which equation shows the relationship between m , the number of months that Zane has been making payments and t , the total amount he has paid his dad?

- A. $t = 45m + 23$
 B. $m = 45t + 23$
 C. $t = 23m + 45$
 D. $t = 68m$

5) Preston needs to write an equation in slope-intercept form to represent the relationship between x and y in the table below. What will be the value of the **y-intercept in his equation**? Record your answer on the grid.

x	2	4	6	8
y	-9	-6	-3	0

$\hookrightarrow (0, b) = (0, \underline{\quad})$

➤ Check your answers!

Wednesday, May 20

Lesson: Linear Equations

Objective: Be able to find the intersecting points of two linear equations.

- 1) Gym A charges a registration fee of $\$75$ plus $\$35.75$ per month for members. Gym B charges a registration fee of $\$164$ plus $\$17.95$ for members. After how many months would the total cost at Gym A and Gym B to be the same for members?

equal

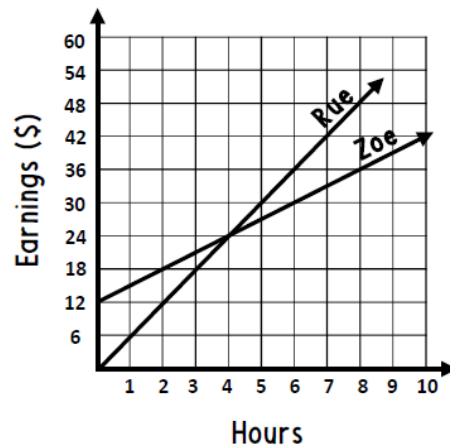
Write the equation: $\underbrace{75 + 35.75m}_{\text{GYMA}} = \underbrace{\hspace{4cm}}_{\text{GYMB}}$

SOLVE:

Answer: _____

- 2) The graph below shows the number of hours that Rue and Zoe have been working at their jobs, as well as how much money they've earned. Which is a correct conclusion about the information shown in the graph?

- F. After 24 hours, Rue and Zoe will have earned the same amount of money.
- G. After 4 hours, Zoe will have earned \$12 more than Rue.
- H. After 4 hours, Rue will have earned \$12 more than Zoe.
- J. After 4 hours, Rue and Zoe will have earned the same amount of money.



- 3) Barrett is ordering t-shirts for his school's student council. Company D charges a \$30 design fee plus \$6.25 per t-shirt. Company E charges a \$12 design fee plus \$9.75 per t-shirt. Which inequality can be used to find x, the minimum number of t-shirts that can be ordered so that the total cost with Company D is less than the total cost with Company E?

COMPANY D

<

COMPANY E

Write the INEQUALITY: _____ < _____

Solve: _____ Answer: _____

- 4) Write the equation:

_____ = _____

Solve: _____ Answer: _____

Solve this equation: $\frac{3}{4}x - 4 = \frac{1}{2}x + 2$

$\frac{-\frac{1}{2}x}{\quad}$ $\frac{-\frac{1}{2}x}{\quad}$

a) Get the variables on the same side.

b) You need common denominators.

c) Get the numbers on the other side.

d) Now, solve: $x = \underline{\hspace{2cm}}$

- 5) Puppy A weighs $4\frac{1}{6}$ pounds at birth and gains $\frac{3}{4}$ pound each week. Puppy B weighs $5\frac{2}{3}$ pounds at birth and gains $\frac{1}{2}$ pound each week. After how many weeks will the puppies weigh the same amount?

Write the equation: $\frac{4\frac{1}{6} + \frac{3}{4}W}{\quad} = \frac{5\frac{2}{3} + \frac{1}{2}W}{\quad}$

↑ PUPPY A = PUPPY B

Solve using these steps:

a) Make the fractions IMPROPER: $\frac{25}{6} + \frac{3}{4}W = \frac{\boxed{\hspace{2cm}}}{\quad} + \frac{1}{2}W$

$-\frac{1}{2}W$ = $-\frac{1}{2}W$

b) Get the variables on one side: $\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
(Common denominators)

c) Get the numbers on the other side: $\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

d) Solve: $\underline{\hspace{2cm}}$

- 6) Tish and Emma are knitting scarves. Tish's scarf is 17.75 inches long, and she knits $2\frac{3}{8}$ inches per minute. Emma's scarf is 4 inches long, and she knits $3\frac{3}{4}$ inches per minute. After how many minutes will Emma's scarf be longer than Tish's scarf?

* Try this one without my artwork!

Answer: _____

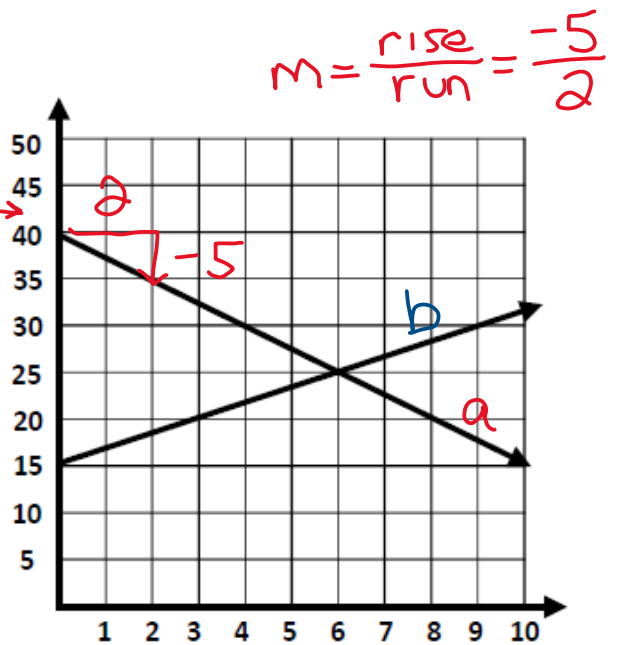
- 7) Where do the lines intersect: (_____, _____)

Write the equations for:

$$y = mx + b$$

a) $y = \frac{-5}{2}x + 40$

b) $y =$ _____



- Be sure to correct your answers and LEARN from what you did incorrectly

Thursday, May 21

Review topics of this week

Objective: Be able to identify functions and calculate the slope from linear graphs or given data; calculate the slope, y-intercept, and write equations in slope intercept form and graph lines; find the intersecting points of two linear equations.

- Review questions!
- **Minor Assessment (Quiz) on FRIDAY!!!**
- **SHOW WORK!**

- 1) Erin weighs 135 pounds and is gaining $\frac{1}{2}$ pound each week. Miranda weighs 143 pounds and is losing $\frac{1}{4}$ pound each week.

When will they be the same weight?

Equation: _____

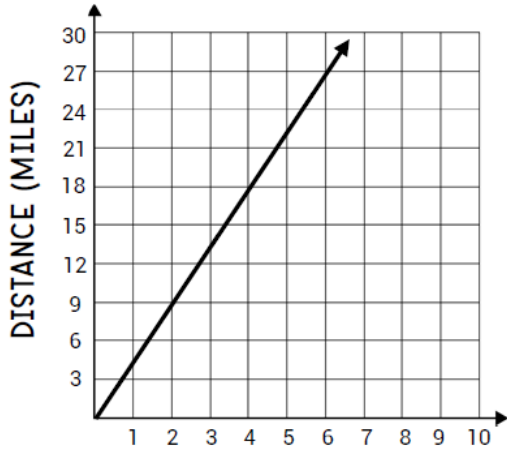
Solution: _____

- 2) Solve the equation below.

$$-4 - 0.2x + 11 = -0.8x + 10$$

X = _____

- 3) Find the rate of change demonstrated in the graph below.



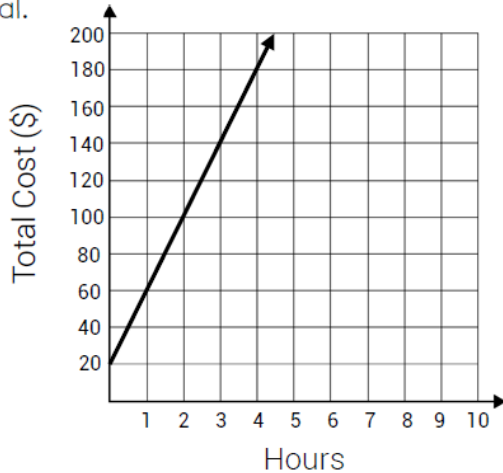
Answer: _____

- 4) Find the slope of the line that contains the following points:

$(3, 4), (5, -1)$

Answer: _____

- 5) Write an equation for the graph which shows the relationship between the cost of renting a bounce house and the number of hours for the rental.



Answer: _____

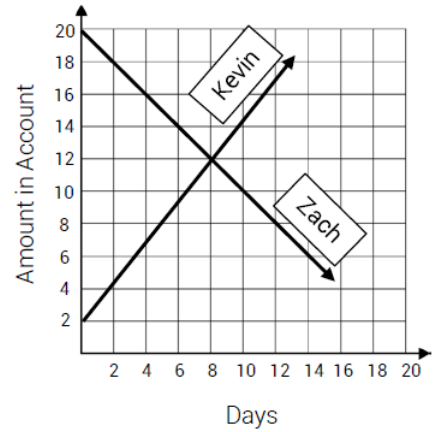
- 6) Tommy's t-shirt company charges a design fee plus a certain amount per t-shirt that customers order. The table below shows the total amount that a customer pays based on the number of t-shirts in their order.

T-SHIRTS	TOTAL COST
0	\$7.50
10	\$52.50
20	\$97.50
30	\$142.50

Write an equation to represent the relationship between the number of t-shirts ordered and the total cost.

7) The graph below shows the amount of money in Zach and Kevin's bank accounts after a certain number of days. Use the graph to answer a-c.

- a. Write an equation for the line representing Zach's account.
- b. Write an equation for the line representing Kevin's account.
- c. After how many days will the two account have the same amount of money?



Friday, May 22 _____ **MINOR ASSESSMENT (QUIZ!)**

Objective: Be able to identify functions and calculate the slope from linear graphs or given data; calculate the slope, y-intercept, and write equations in slope intercept form and graph lines; find the intersecting points of two linear equations.

1) Solve the equation below.

$$14x - 34 = 11x + 29$$

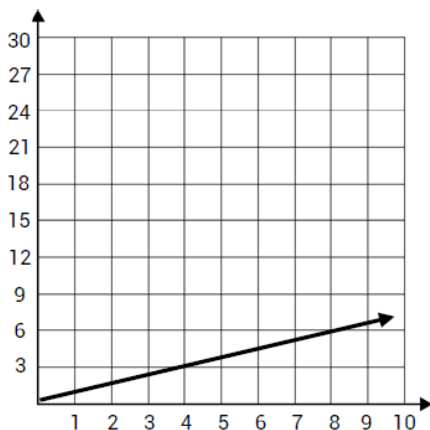
$$x = \underline{\hspace{2cm}}$$

2) A video game store allows customers to rent games for \$4.75 each. Customers can also buy a membership for \$54 annually, and video games would only cost \$2.50 each. Write and solve an equation to find the number of video games a customer would have to rent in a year in order for the two options to be equal.

Equation: _____

Solution: _____

3) Find the rate of change demonstrated in the graph below.



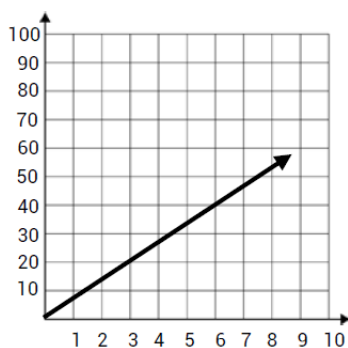
Answer: _____

- 4) Find the slope of the line that contains the following points:

$(2, 5), (3, -1)$

Answer: _____

- 5) Write an equation in slope-intercept form to represent the graph shown.



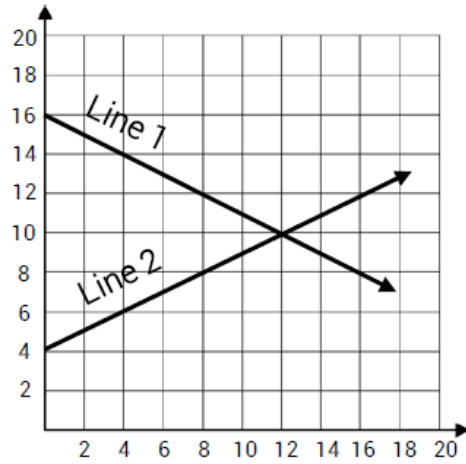
Answer: _____

- 6) Write an equation in slope-intercept form that represents the relationship between x and y as shown in the table.

x	y
0	110,000
10	109,760
20	109,520
30	109,280

Answer: _____

7) Use the graph to answer a and b.



a. Which two equations are graphed above?

1: _____

2: _____

b. What ordered pair satisfies both equations?

Have a great weekend!

ANSWERS

MONDAY:

1) $m = \frac{54-48}{2005-200} = \frac{6 \text{ inches}}{5 \text{ years}}$; Vanessa's height increases 6 inches in 5 years

2) $m = \frac{-2 \text{ gallons}}{3 \text{ seconds}}$; Water decreases 2 gallons every 3 seconds

3) A) $\frac{16}{40} = \frac{2}{5}$ B) $\frac{50}{20} = \frac{5}{2}$ C) $\frac{12}{15} = \frac{4}{5}$ D) $\frac{22}{52} = \frac{11}{26}$

4) $m = \frac{2}{10} = \frac{1}{5} = 0.2$; F

5) B

6) H (x cannot repeat)

7) Similar; $m = \frac{3}{1} = 3$

8) G

9) A

10) Rate of change (slope) = $\frac{63-42}{0-2} = -\frac{21}{2}$

TUESDAY:

1) A) $m = \frac{18-14}{0-2} = \frac{4}{-2} = -2$; B) y-intercept (b): (0, 18) C) $y = -2x + 18$

2) A) $m = \frac{325}{25} = \frac{13}{1} = 13$ B) y-intercept (b): (0, 75) C) $y = 13x + 75$

3) A) $m = \frac{10}{4} = \frac{5}{2}$ B) y-intercept (b): (0, -10) C) $y = \frac{5}{2}x - 10$

4) A

5) Y - intercept: (0, -12)

WEDNESDAY:

1) $75 + 35.75m = 164 + 17.95m$
 $75 + 17.80m = 164$
 $17.80m = 89$
 $m = 5 \text{ months}$

2) J

3) $30 + 6.25t < 12 + 9.75t$
 $30 < 12 + 3.50t$
 $18 < 3.50t +$
 $5.14 = t$

4) $4x - 4 = -x - 1$
 $5x - 4 = -1$
 $5x = 3$
 $x = \frac{3}{5}$

5) $\frac{3}{4}x - 4 = \frac{1}{2}x + 2$ $\frac{1}{4}x - 4 = 2$ $\frac{1}{4}x = 6$ $x = 24$

6) $4\frac{1}{6} + \frac{3}{4}w = 5\frac{2}{3} + \frac{1}{2}w$ $\frac{25}{6} + \frac{3}{4}w = \frac{17}{3} + \frac{1}{2}w$ $\frac{25}{6} + \frac{1}{4}w = \frac{17}{3}$

$$\frac{1}{4}w = \frac{9}{6}$$

$$\frac{1}{4}w = \frac{3}{2}$$

$$w = 6$$

7) $17.75 + 2.375m < 4 + 3.75m$
 $17.75 < 4 + 1.375m$
 $13.75 < 1.375m$
 $10 < m$

8) Intersect at (6, 25);

A) $y = -\frac{5}{2}x + 40$

B) $y = \frac{5}{3}x + 15$

THURSDAY:

$$1) \quad 135 + \frac{2}{4}w = 143 - \frac{1}{4}w \quad 135 + \frac{3}{4}w = 143$$

$$\frac{3}{4}w = 8$$

$$3w = 32$$

$$w = \frac{32}{3}$$

$$w = 10\frac{2}{3} \text{ weeks}$$

$$2) \quad -4 - 0.2x + 11 = -0.8x + 10$$

$$-0.2x + 7 = -0.8x + 10$$

$$0.6x + 7 = 10$$

$$0.6x = 3$$

$$x = 5$$

$$3) \quad \text{Rate of change (slope)} = \frac{9-0}{2-0} = \frac{9}{2}$$

$$4) \quad \text{Slope} = \frac{-1-4}{5-3} = \frac{-5}{2}$$

$$5) \quad m = \frac{100-20}{2-0} = \frac{80}{2} = 40$$

$$b = 20$$

$$y = 40x + 20$$

$$6) \quad m = \frac{52.50-7.50}{10-0} = \frac{45}{10} = 4.5$$

$$b: (0, 7.50)$$

$$y = 4.5x + 7.50$$

$$7) \quad \text{A) } y = -x + 20$$

$$\text{B) } y = \frac{5}{4}x + 2$$

$$\text{C) } (8, 12); 8 \text{ days}$$