Name: _____ Period: ___ Date: 11.14.19 Assignment (Due 11.19.19 at the beginning of class)

Study Guide for Unit 3: End-of-Unit Assessment

1. Select all of the ordered pairs (x, y) that are solutions to the linear equation $2x + 3y = 6$.

a. $(0, 2)$

b. $(0, 6)$

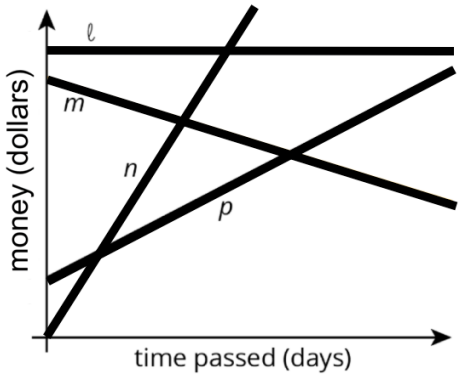
c. $(2, 3)$

d. $(3, -2)$

e. $(3, 0)$

f. $(6, -2)$

2. For a month, the balance of four friends' bank accounts were recorded. Lines ℓ, *m*, *n* and *p* are graphs of the balance over time in Lucy, Mark, Nick, and Paulina's bank accounts. Which statement is true?



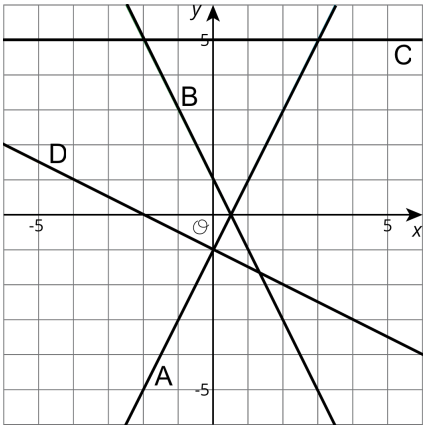
a. The balance in Mark's account increased steadily

b. The balance in Lucy's account decreased as time passed

c. The balance in Paul's account rose faster than the balance in Nick's account

d. Initially, the balance was higher in Mark's than in Nick's

3. First determine the slope and y-intercept of each line, then use the m and b to write an equation for each line.



NOTE: Write all equations using $y=mx+b$ form.

a. The equation for line A is _____.

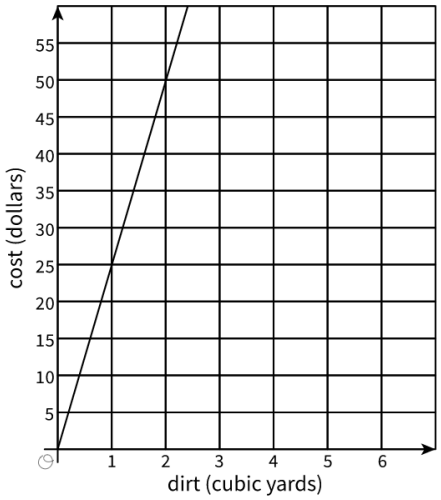
b. The equation for line B is _____.

c. The equation for line C is _____.

d. The equation for line D is _____.

4. A contractor must haul a large amount of dirt to a work site. She collected information from two hauling companies. EZ Excavation gives its prices in a table. Happy Hauling Service gives its prices in a graph.

dirt (cubic yards)	cost (dollars)
8	196
20	490
26	637

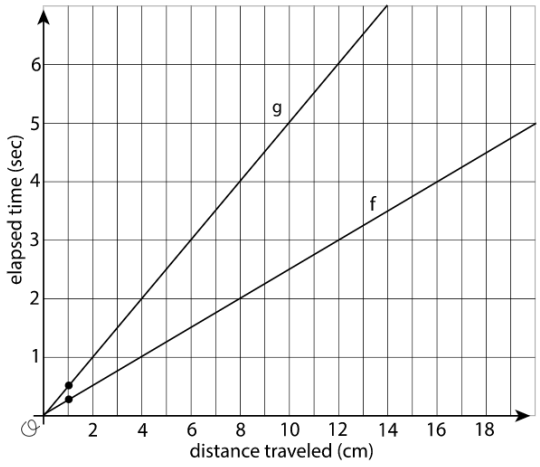


a. How much would each hauling company charge to haul 40 cubic yards of dirt? Explain or show your reasoning.

b. Calculate the rate of change for each relationship. What do they mean for each company?

c. Which hauling company should she hire? Explain or show your reasoning.

5. This graph represents the positions of two turtles in a race.



a. On the same axes, draw a line for a third turtle that is going half as fast as the turtle described by line g. **Label this third turtles line as h.**

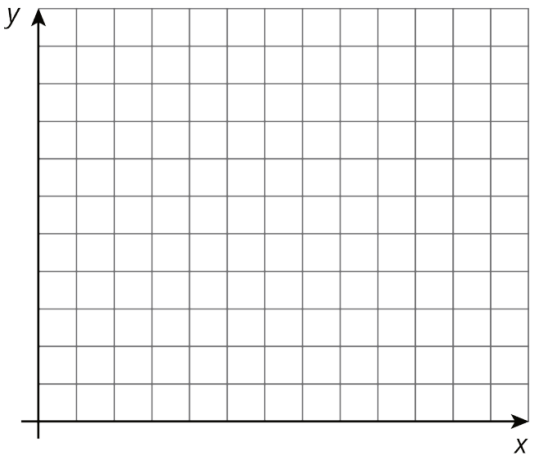
b. Explain how your line shows that the turtle is going half as fast.

6. Customers at the gym pay a **membership fee of $20 to join** and then **a fee of $10 for each class they attend**.

a. What is the total cost (membership fee and fee for each class) to attend 1 class?

b. What is the total cost for attending $\boldsymbol{x}$ classes?

c. Graph the cost of attending up to 10 classes. **Be sure to label your axes and scale them by labeling each gridline with a number.**



d. Is there a proportional relationship between the number of classes taken and the cost of the gym? Explain how you know.

e. Draw a line parallel to the line you graphed that goes through the point $(\mathbf{0}, \mathbf{40})$. Suppose that this line represents the pricing plan for another gym. What is the startup fee and monthly cost for this plan?

7. It costs **$0.50 to buy an individual donut** and **$8 to buy a box of donuts**.

a. Complete the table showing **three ways** John can spend a total of $25 buying individual donuts and/or boxes of donuts. **Fill in all 3 blank boxes. Next to the number of individual donuts, d, or number of boxes, b, show the total price spent for that option.** Each row should represent a total of $25 spent.

Number of individual donuts, *d*	Number of boxes, *b*
2	
	2
34	

b. Write an equation that relates the number of individual donuts d and the number of boxes b John can buy.

8. Select all the points that are on the graph of the line **3x + 6y = 30**.

a. **(0 , 5)**

b. **(8 , 1)**

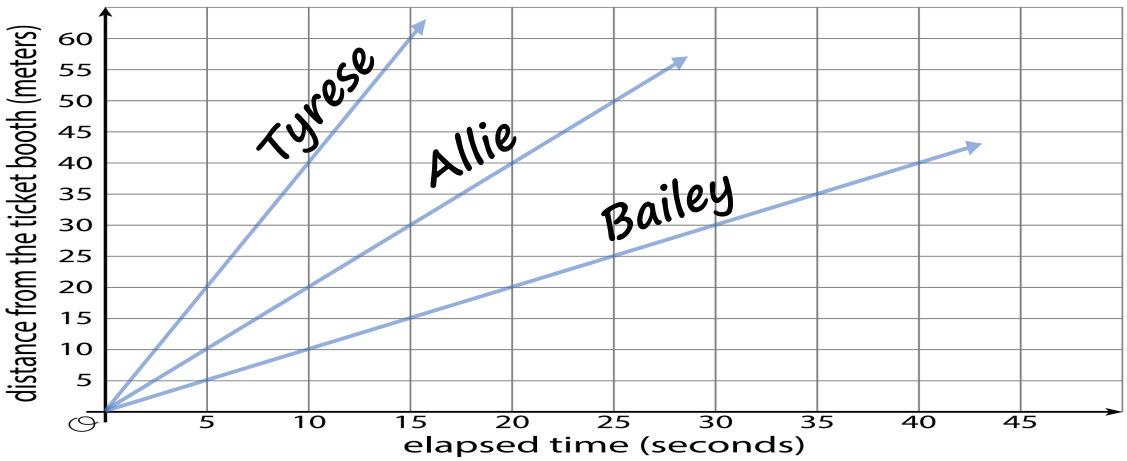
c. **(-2 , 6)**

d. **(2 , 4)**

e. **(4 , 2)**

f. **(10 , 0)**

9.



Describe the rate at which each person is walking away from the ticket booth.

Tyrese walks at a rate of:

Allie walks at a rate of:

Bailey walks at a rate of:

10. *Fill in the blanks based on the equation given or rule stated.*

$y = x + 5$

Input, *x*	1	2	3	4
Output, *y*				

$y = 4x$

Input, *x*	0	2	4	6
Output, *y*				

The output is 5 times the input.

Input, *x*	1	3	5	7
Output, *y*				

The output is 3 more than the input.

Input, *x*	0	1	2	3
Output, *y*				

For each output, divide the input by 2, then add 4.

Input, *x*		2	4	10		
Output, *y*	4	5	6	9	12	17

For each output, multiply the input by 4, then subtract 5.

Input, *x*	2	3	4	7		
Output, *y*	3	7	11	23	35	55