

- 3.) Helicopter J starts at an elevation of 1,400 feet and descends at 8 feet per second. At the same time, a second helicopter K, flying at 1,500 feet, starts to descend at 10 feet per second.

Write an equation to model the elevation of each helicopter.

| Helicopter J    | Helicopter K     |
|-----------------|------------------|
| $y = 1400x + 8$ | $y = 1500x + 10$ |

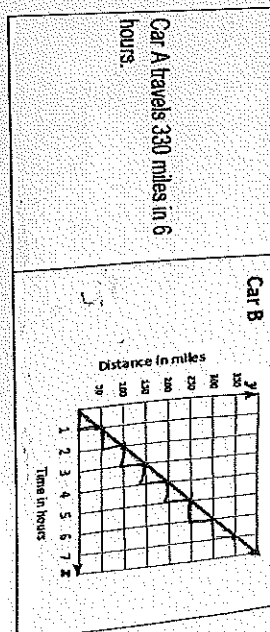
- b.) What are the helicopters' elevations after 20 seconds? After 60 seconds?

|                            | Helicopter J | Helicopter K |
|----------------------------|--------------|--------------|
| Elevation after 20 seconds | 28,800       | 30,000       |
| Elevation after 60 seconds | 84,008       | 90,010       |

- c.) When does one helicopter pass the other? What is the elevation when that happens? Explain.

Helicopter K. The elevation of that is 5,800 is when they pass.

- 4.) The distance traveled and time elapsed for two cars are shown below.



Part A  
What is the speed of Car A? Explain using mathematics. The speed of Car A is 55 miles per hour. I divided 330 by 6 and got 55.

Part B  
What is the speed of Car B? Explain using mathematics. The speed of Car B is 50 miles per hour. Because the unit rate is 50 to 1.

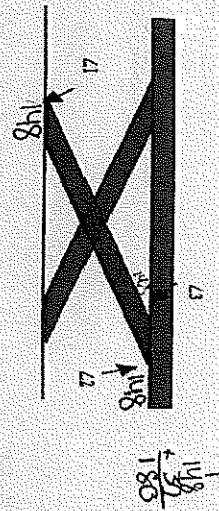
Part C  
Write an equation to represent the distance traveled by Car A. Then, write an equation for Car B.

Car A  
 $y = 55(x)$   
Car B  
 $y = 50(x)$

Part D  
At how many hours will Car A have traveled 550 miles? At how many hours will Car B have traveled 550 miles? Explain using mathematics.

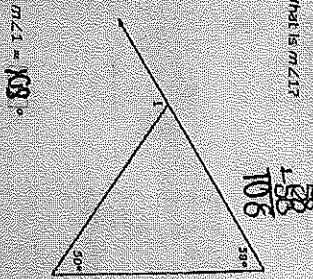
Car A had 10 hours to travel 550 miles and Car B had 11 hours. For Car A I divided 550 by 55 and got 10 and for Car B I divided 550 and got 11.

- 1.) You are building a bench for a picnic table. The top of the bench will be parallel to the ground.  
If  $m\angle 1 = 148^\circ$ , find  $m\angle 2$  and  $m\angle 3$ .



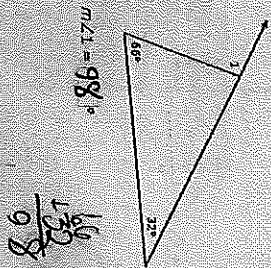
$$\begin{array}{r} m\angle 2 \quad 148^\circ \\ m\angle 3 \quad 32^\circ \end{array}$$

What is  $m\angle 1$ ?



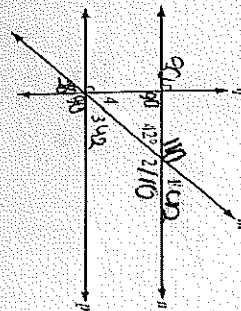
$$m\angle 1 = 108^\circ$$

What is  $m\angle 1$ ?



$$m\angle 1 = 98^\circ$$

- 2.) In the diagram below, lines  $n$  and  $p$  are parallel to each other. Line  $q$  is perpendicular to lines  $n$  and  $p$ .



- a.) Justify two ways you know  $m\angle 3$ . Include your specific knowledge of angle relationships.  
 $m\angle 3$  is  $42$  because  $1$  and  $42$  are not to each other which makes  $1$   $42$ , so  $3$  is on the bottom but on top  $m\angle 1$  so  $3$  is  $42$ . Another way is that  $42$  plus two other numbers get 180 these numbers are  $98$  and  $110$ .

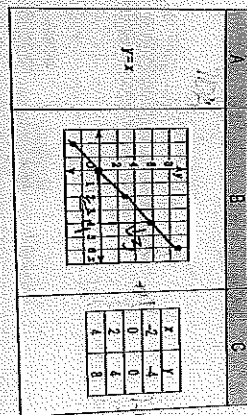
- b.) Justify two ways you know  $m\angle 1$ . Include your specific knowledge of angle relationships.  
 $m\angle 1$  is  $42$  because  $3$  is  $42$  and  $3$  is on line  $p$  and  $1$  is on line  $n$  and they are parallel to each other, another way is that

Exam # 3

November 8, 2017

Name: Raphael

1) Three functions are represented below.

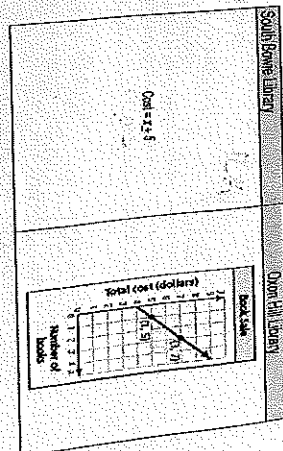


a) What are the rates of change for each of the functions?

Function A: 1Function B: 2Function C: -2

b) Which function has the least rate of change? \_\_\_\_\_

c) The y-intercepts of all three functions are the same. True False

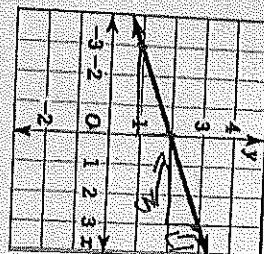
d) The y-value when  $x = -2$  is greater in Function B than in Function C. True Falsee) The y-value when  $x = 2$  is the same in Function A as in Function B. True False2) The South Borneo Library and Don Hill Library are having a used book sale. The table and  $y$  is a function of the number of books,  $x$ .

a) In which library is cheaper to buy books? Explain.

South Borneo Library because

b) Which function has a greater constant rate of change? Explain.

c) How much cheaper or more expensive is South Borneo Library than Don Hill Library? Explain.



Part A  
Calculate the slope of the line.

$$-1/2$$

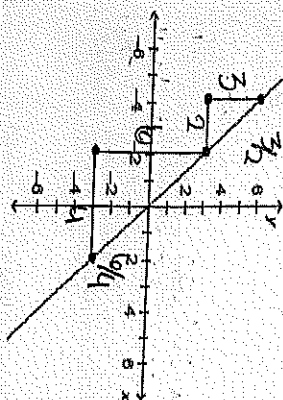
Part B  
What is the y-intercept (b) of the line?

$$0.2$$

Part C  
What is the equation of the line?

$$y = -1/2(x) + 2$$

3.) Two triangles are created by the points below.



Part A  
Explain how you know that the triangles are similar.  
They are similar because  $1/2$  and  $1/2$  are the same.  $1/2$  is  $1/2$  and  $1/2$  is  $1/2$ .

Part B  
Use each of the triangles to determine the slope of the graph line. Why is the slope the same regardless of which pair of points you choose? The slope of the graph line is  $1/2$  and  $1/2$  are the same because  $1/2$  and  $1/2$  are the same.