

Review - Winter 2014

March 16, 2014

1. Brian, Christine, and Joey are all siblings who live together. There was one cookie left in the cookie jar, and one of the siblings ate the last cookie. When their mother asked who ate the cookie, the following responses were given by the siblings:

Brian: Christine ate the cookie.

Christine: Joey ate the cookie.

Joey: Brian is telling the truth.

If only one of the siblings is telling the truth, which sibling told the truth? Who ate the cookie?

2. Children in a class are watering plants in the school garden. If each child waters two plants, one of the children will have nothing to do. If each child waters only one plant, there will be one plant left unwatered. How many children are there in the class?

3. The following are sequences that follow specific patterns. Write the next possible two numbers in each sequence.

(a) 1, 1, 2, 3, 5,

(b) 2, 3, 6, 18,

(c) 1, 2, 3, 6, 11,

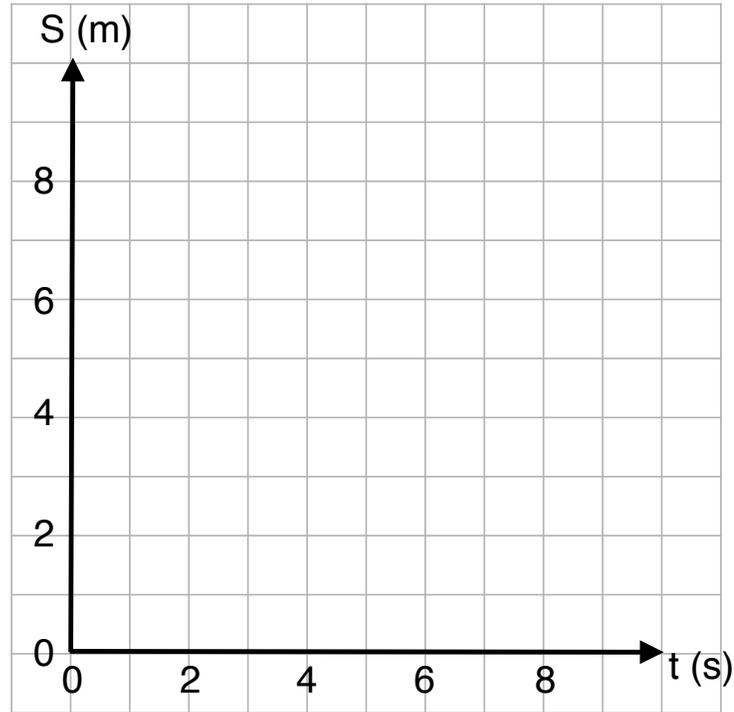
4. Ariella and Leo start from the same point and being walking in opposite directions. Leo walks at a speed of $42 \frac{m}{min}$ and Ariella walks at a speed of $60 \frac{m}{min}$.

(a) How far apart will they be in 3 minutes?

(b) How long will it take them to be 408 meters apart?

8. Robert is controlling an electric toy car. For the first two seconds, the car travels at a constant speed and goes from being $2m$ away from Robert to being $8m$ away from Robert. For the next two seconds, the car does not move. Then, the car takes 4 seconds to travel back to Robert's position at a constant speed.

(a) Graph the car's distance from Robert with respect to time.



(b) What is the speed that the car travels at in the first two seconds?

(c) What is the speed that the car travels at when it goes back to to Robert?

9. The following tables show the values of y corresponding to the given values of x . Find y as a function of x for the following tables:

(a)

x	0	1	2
y	1	3	5

$y =$

(b)

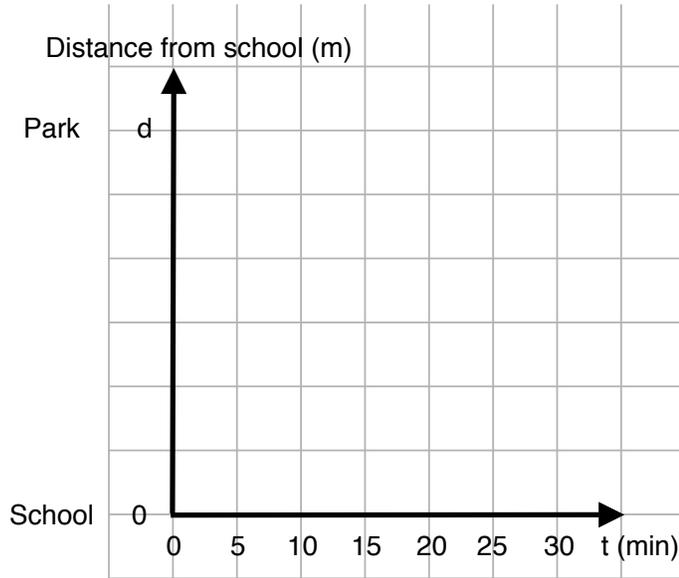
x	2	4	6
y	1	2	3

$y =$

10. Ethan and Jason are riding their bikes in the same direction on a bike trail. Ethan is riding his bike at a speed of $9mph$, and Jason is riding his bike at a speed of $15mph$. If Jason is originally ahead of Ethan by 5 miles, how many hours will it take for Jason to be ahead of Ethan by 20 miles?

11. Kate and Dana decide to meet at the park after school. The park is d meters away from school. It takes Dana 30 minutes to walk from school to the park, and it takes Kate 20 minutes to walk from school to the park. Dana leaves from school 5 minutes before Kate leaves.

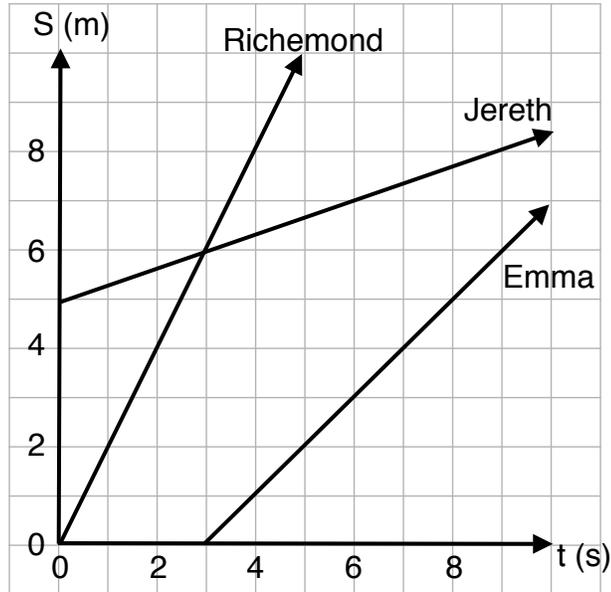
(a) Graph Dana's distance and Kate's distance as functions of time on the coordinate plane below.



(b) How long does it take Kate to catch up with Dana?

12. Mark is short of 20 cents to buy 8 bananas. If he buys 5 bananas, he will have 1 dollar left. How much money does he have?

13. The following graph shows Richemond's, Jereth's, and Emma's distances as functions of time. Answer the following questions using the graph.

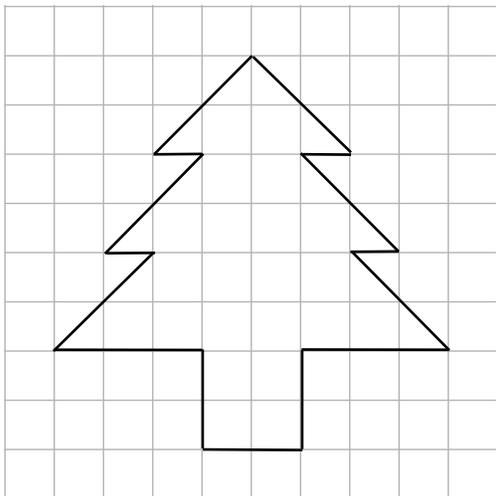


- (a) What is Richemond's speed?
- (b) At what time do Richemond and Jereth meet? What is their distance from 0 at this moment?
- (c) At what time do Emma and Jereth meet? What is their distance from 0 at this moment?
- (d) Write how Jereth's distance (S) is related to time (t):

$$S =$$

14. A standard brick weights $5lbs$. A giant bricks is twice as tall, three times as wide, and four times as long as the original brick. How much does a giant brick weigh?

15. Elijah made the following cut-out of a tree from a cardboard. The area of each small square is $1cm^2$. Elijah's brother makes a cut-out using the same design but on the grid paper divided into squares of area $6cm^2$ each. The mass of Elijah's cut-out is 50 grams. What is the mass of his brother's cut-out?



16. Prakash can mow a lawn in 1 hour. His dad can mow the same lawn in 30 minutes. How long will it take them to mow the lawn if they work together?