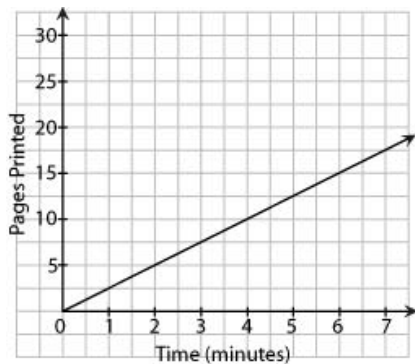


- Mrs. Kimsey purchased a bushel of large apples that weighs about 24 pounds. The bushel contains 48 apples. What is the approximate weight, in ounces, of one apple?
- A tortoise traveled  $\frac{1}{4}$  kilometer in  $\frac{7}{8}$  hour. What was its average speed in kilometers per hour (kph)?
- Find the constant of proportionality of the graph as a fraction and a decimal.



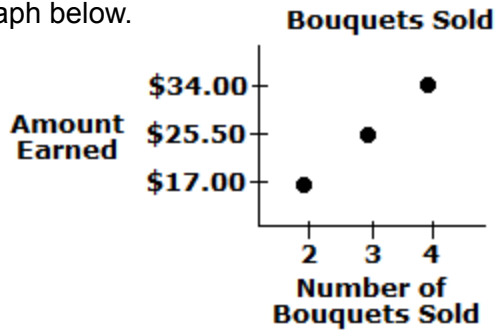
- Sarah used 96 roses to make 12 identical bouquets.

Write each expression in the box where it belongs. Some expressions may not belong to either box.

The number of roses in each bouquet.	An equation which represents the number of roses, $r$ , Sarah used to create $b$ bouquets.

$r = 12b$	8	$r = 84b$	12
		$r = 8b$	

5. Victor sells bouquets of flowers at a farmers market. He earns a flat rate for each bouquet sold, shown on the graph below.



The table below shows the number of bouquets Victor sold last week. Fill in the table to show how much money Victor earned.

Day	Number of Bouquets Sold	Amount Earned
Friday	10	\$ <input type="text"/>
Saturday	8	\$ <input type="text"/>
Sunday	14	\$ <input type="text"/>
Total	32	\$ <input type="text"/>

6. The table shows how three cell phone companies charge for minutes.

Company	Number of Minutes per Month			
	100	200	500	1200
Verizon	\$20	\$30	\$40	\$50
T-Mobile	\$10	\$20	\$50	\$60
AT&T	\$5	\$10	\$25	\$60

For which company or companies is there a proportional relationship between the number of minutes and the monthly cost?

7. Which table shows a proportional relationship between  $x$  and  $y$ ?

A.

X	Y
-4	-5
-3	-6
-2	-7
-1	-8

B.

X	Y
6	-2
7	-1
8	0
9	1

C.

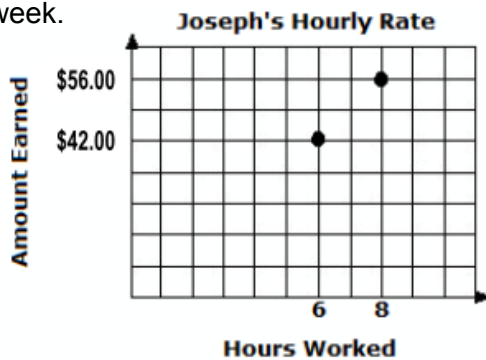
X	Y
6	3
7	4
8	5
9	6

D.

X	Y
2	7
6	21
18	63
20	70

8. The time it takes Sam's computer to download a music file is proportional to the size of the file. A 6-megabyte file takes 8 seconds to download. Which equation describes the relationship between  $x$ , the file size in megabytes, and  $y$ , the time in seconds?
9. A piano tuner charges \$60 for 1.5 hours of work. Which proportion can be used to find  $x$ , the number of dollars the piano tuner charges for 4 hours of work?

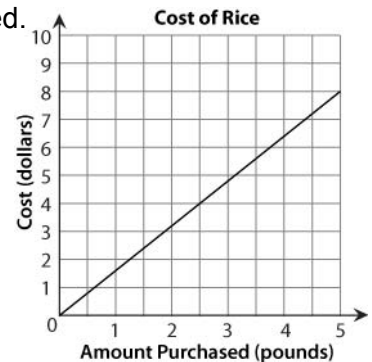
10. Joseph works at a restaurant where he makes a constant hourly rate. Joseph wants to calculate that hourly rate, so he graphed the amount he was paid and the hours he worked for two days last week.



Using the graph Joseph created, he incorrectly calculated that his hourly rate is \$7.25. What is the correct hourly rate Joseph earns?

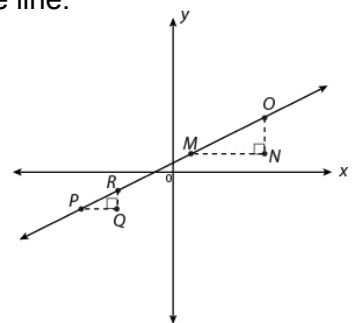
11. The graph shows how the cost of rice depends on the amount purchased.

What is the meaning of the point  $(0, 0)$  on the graph?



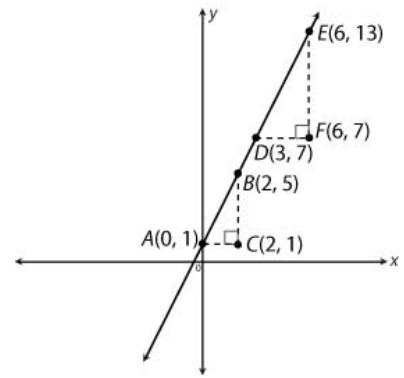
12. The figure shows two right triangles with their hypotenuses on the same line.

In the figure,  $\frac{RQ}{PQ} = \frac{ON}{MN}$ . Explain why that relationship is true.

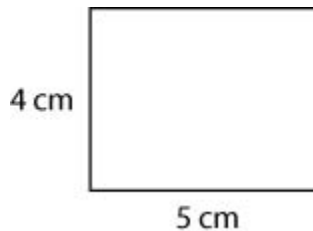


13. The diagram shows four points on the graph of the line  $y = 2x + 1$ .

What is the best strategy for showing that the slope of the line between points  $A$  and  $B$  is equal to the slope of the line between points  $D$  and  $E$ ?



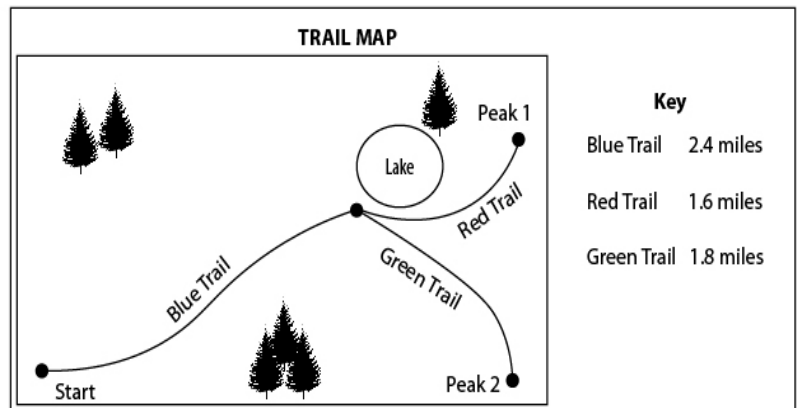
14. Lee drew this scale drawing of his rectangular bedroom. Each 2 cm in his drawing equals 8 feet.



What is the actual perimeter of Lee's room, in feet?

15. Chantal is planning to hike with some friends in the mountains. The trail map below shows the actual distance of their route from the beginning of the Blue Trail to the junction with the Red Trail, and from there to the top of Peak 1.

Chantal determined that the length of their route on the map measured 5 inches. Based on that length, what is the scale on the map?

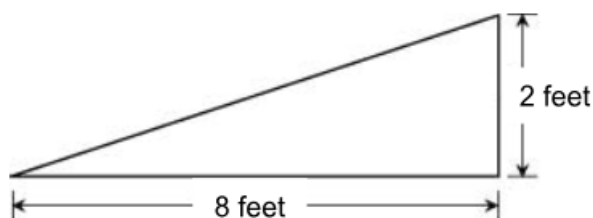


16. Franklin needs 1.5 meters of ribbon to wrap each gift. He has a spool of ribbon that contains 25 feet of ribbon. One meter is equivalent to approximately 3 feet. How many gifts of the same dimension can he wrap using the spool of ribbon?

17. Maria is trying to decide which one of two winter coats she should buy. The blue coat usually costs \$50 but is on sale for 25% off. The black coat usually costs \$56 but is on sale for 40% off. How much less is the sale price of the black coat than the sale price of the blue coat?

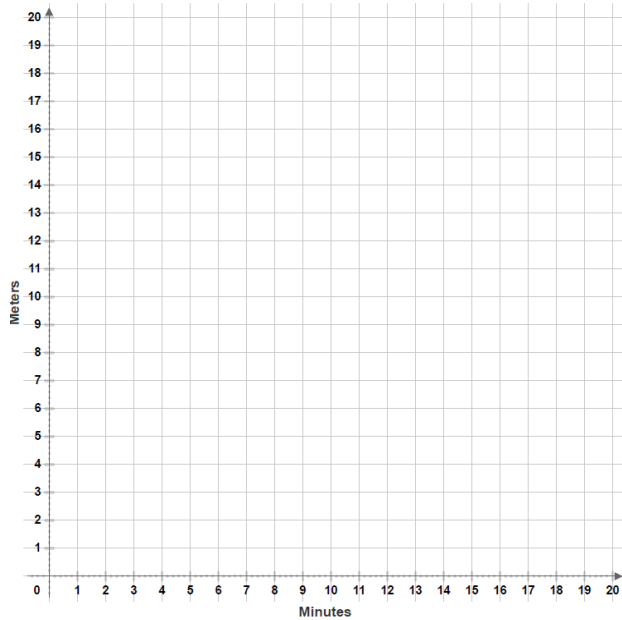
18. A random sample of 120 individuals were asked to express their preference for three similar products. Product A was chosen by 40 individuals, Product B by 55 individuals, and Product C by 25 individuals. The total population from which the sample was chosen was 4,800 individuals. What is a good estimate for the number of people from the total population who chose Product C?
19. Customers at a fast-food restaurant were invited to complete a brief survey to rate their experiences at the restaurant. One day, 48 customers chose to complete the survey. Explain why this was probably NOT a representative sample.
20. Sarah is conducting a survey to determine if the adults in her town will vote to fund a new city park. Which of the following samples would be most representative of the voting population?
- A. Sarah asking 20 parents of her friends
  - B. Sarah asking every other person leaving the mall until she asks 20 people
  - C. Sarah calling 20 randomly selected adults in her town
  - D. Sarah sending surveys to 40 local business owners and receiving 20 responses
21. A school is conducting a study on student achievement. The school has 160 sixth graders, 120 seventh graders, and 120 eighth graders. The school plans to include data from 25 sixth graders, 25 seventh graders, and 25 eighth graders. Is this a representative sample? Explain why or why not. If it is not, suggest a sample that would be representative and explain why.

22. The following graph shows a wheelchair ramp that was built at a library.



The ramp measures 8 feet long and is 2 feet from the ground. What is the slope of the ramp?

23. An ant is 18 meters (m) from his ant hill. He walks about 2 meters per minute directly toward the ant hill. Graph the line on the coordinate grid below which shows how far the ant is from the ant hill after walking any number of minutes. Use the x-axis to represent the number of minutes and the y-axis to represent the distance from the ant hill in meters.



24. Each student in Mrs. Halstead’s class was assigned a random group of 10 seventh graders. They asked everyone in each group the following question: “Do you prefer vanilla or chocolate ice cream?” The results of some of the students’ findings are shown below.

- Diane’s group: 4 vanilla and 6 chocolate
- Brian’s group: 3 vanilla and 7 chocolate
- John’s group: 1 vanilla and 9 chocolate
- Jennifer’s group: 2 vanilla and 8 chocolate

When the class combined all of the results, they found that 100 seventh graders preferred vanilla and 200 preferred chocolate. Which student’s results were closest to the class results?

25. A movie critic rates movies on a scale of 4 stars (excellent) to 1 star (worthless). A summary of her ratings for 20 movies is shown in the table.

**Movie Ratings**

Rating	Number of Movies
★★★★	3
★★★	7
★★	6
★	4

If the critic rates a total of 100 movies, what is the best prediction for the number of movies she gives exactly 4 stars?