

Name: _____

Multiple-Choice

1. The design for a rectangular garden has a length-to-width ratio of 7:5.

Which of the following could be used to determine the width of the garden if the length is 6.5 m?

a $\frac{5}{7} = \frac{6.5}{x}$

b $\frac{7}{5} = \frac{x}{6.5}$

c $\frac{6.5}{7} = \frac{5}{x}$

d $\frac{6.5}{x} = \frac{7}{5}$

2. What is the value of k in the proportion below?

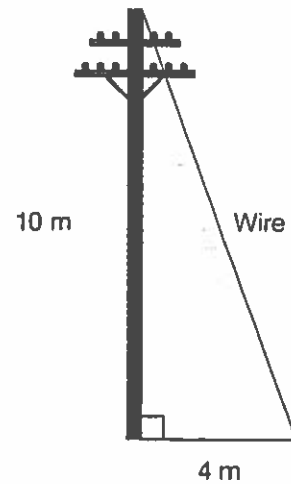
$$\frac{9}{k} = \frac{24}{32}$$

- a 12
b 15
c 16
d 17

3. What value of x makes the equation $4x - 5 = -6x + 15$ true?

- a 2
b 1
c -5
d -10

4. A wire is attached from the top of a 10 m pole to a spot on the ground 4 m away from the base of the pole, as shown below.



Which of the following is closest to the length of the wire?

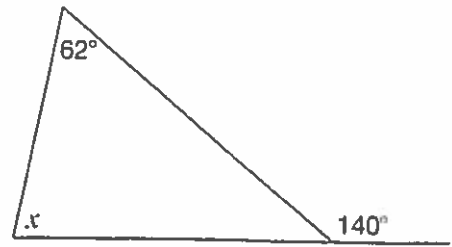
- a 11 m
b 14 m
c 20 m
d 28 m
5. A bicycle has a regular price of \$175. It is on sale for 20% off.
- Which of the following is closest to the total cost, including 13% tax?
- a \$140
b \$158
c \$163
d \$168

6. For babysitting, Becky charges according to the equation $C = 5n + 9$, where C is the amount charged, in dollars, and n is the number of hours she babysits.

Which statement about this situation is correct?

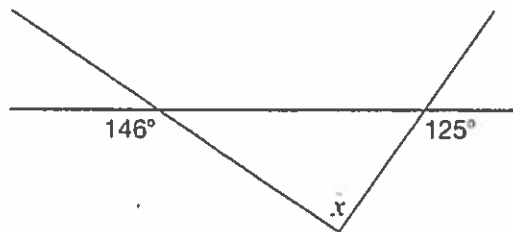
- a Becky charges \$14 per hour.
- b Becky charges a flat fee of \$14.
- c Becky charges an initial fee of \$5, plus \$9 per hour.
- d Becky charges an initial fee of \$9, plus \$5 per hour.

8. What is the value of x in the diagram below?



- a 40°
- b 62°
- c 78°
- d 118°

7. What is the value of x in the diagram below?



- a 91°
- b 89°
- c 55°
- d 34°

9. Each week, Marissa withdraws the same amount from her bank account.

The equation $A = 1550 - 90w$ represents the relationship between the amount of money remaining in her account, A , in dollars, and the number of weeks of withdrawing, w .

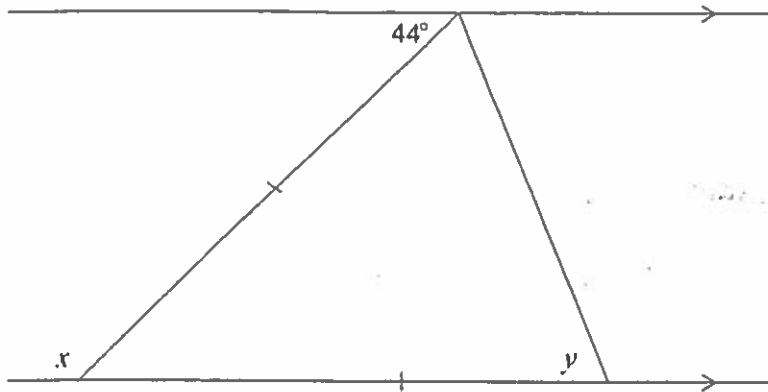
For how many weeks has Marissa made withdrawals when the amount remaining in the account is \$110?

- a 14
- b 16
- c 17
- d 18

Open-Response

10. Outside Angles

Look at the following diagram.

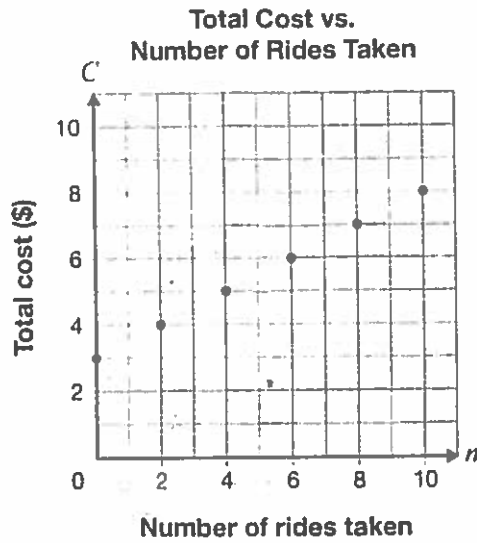


Complete the chart below with the values of x and y . Justify your answers using geometric properties.

Value	Justification using geometric properties
$x =$ _____	
$y =$ _____	

II. Fun Fair

The graph below shows the linear relationship between the total cost of a day at a fair, C , and the number of rides taken, n .



Complete the table below with information about this relationship.

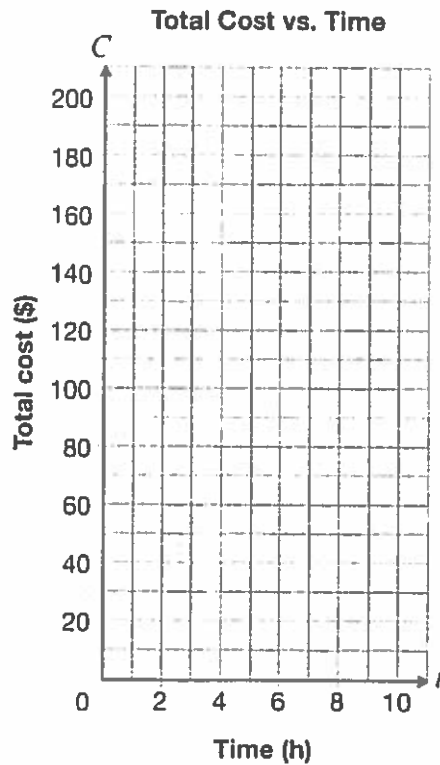
Initial value: _____	Rate of change: _____
Meaning of initial value in this situation	Meaning of rate of change in this situation

12. Happy Trails

The total cost of horseback riding at a horse ranch is made up of a fixed fee and a cost per hour. The table below shows information about the total cost.

Time (h)	Total cost (\$)
2	50
4	80
7	125

Graph the data in the table on the grid below.



Write an equation that relates the total cost of a ride, C , to the time spent riding, t .

$$C = \underline{\hspace{10em}}$$

Show your work.

13. More Apples

Two stores are advertising specials on apples.

Store A
8 apples for \$4.40

Store B
12 apples for \$5.76

Apples are sold individually.

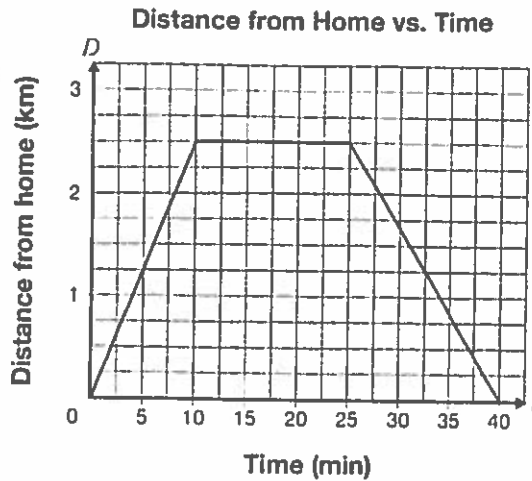
How much less would 30 apples cost at Store B than at Store A?

Justify your answer.

Multiple-Choice

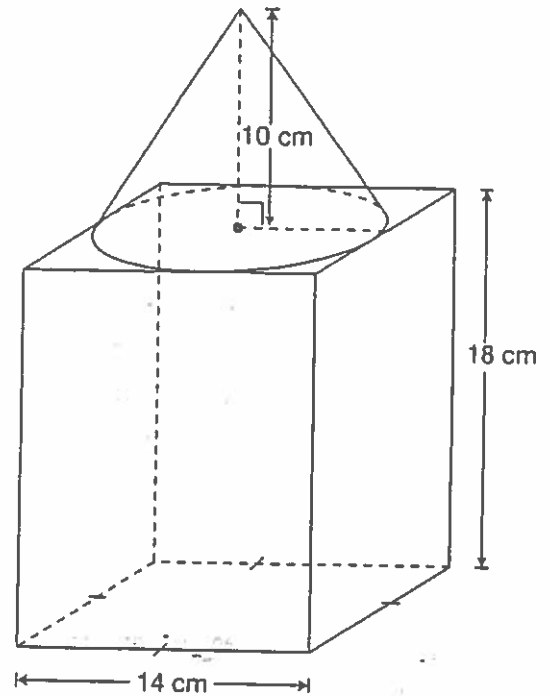
14. Oscar rides his bicycle to the beach along a straight road. While at the beach, he realizes he has forgotten his sunscreen and returns home.

The graph below shows information about his trip.



- Which of the following is true about Oscar's trip?
- a The beach is 10 km from Oscar's home.
 - b His speed riding to the beach is 0.25 km/min.
 - c His speed riding home from the beach is 1.7 km/min.
 - d He stays at the beach for 25 minutes before he returns home to get sunscreen.

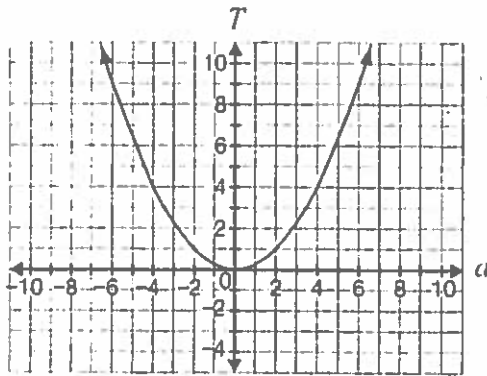
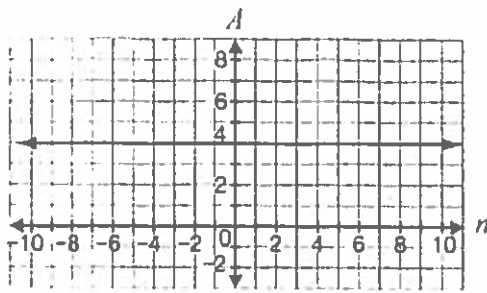
15. The figure below is made of a square-based prism and a cone.



Which of the following is closest to the volume of the figure?

- a 3675 cm^3
- b 4041 cm^3
- c 5067 cm^3
- d 5581 cm^3

16. Consider the four different relationships represented below.



How many are linear relationships?

- a 1
- b 2
- c 3
- d 4

w	A
0	0
2	14
4	20
6	18
8	8

n	C
1	13
2	9
3	6
4	4
5	3