

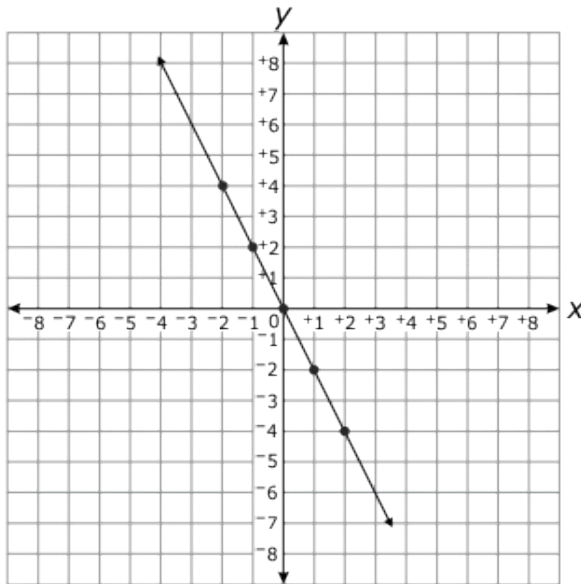
TEST NAME: **Constant of Proportionality**
TEST ID: **1557710**
GRADE: **07 - Seventh Grade**
SUBJECT: **Mathematics**
TEST CATEGORY: **My Classroom**

Student: _____

Class: _____

Date: _____

1. What is the constant of proportionality for the line on the graph below?



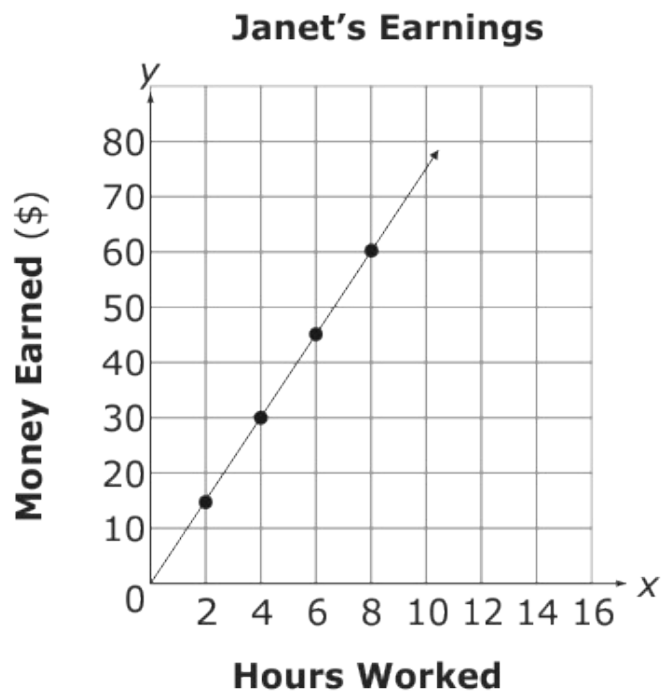
A. 2

B. $\frac{1}{2}$

C. $-\frac{1}{2}$

D. -2

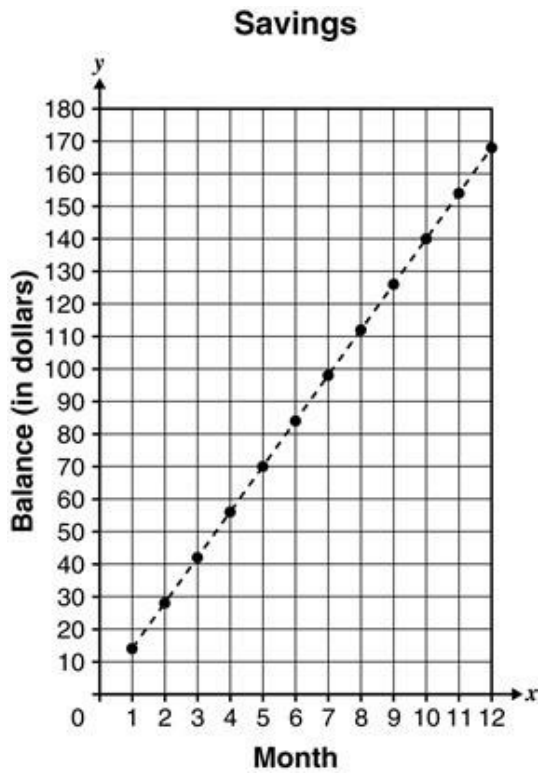
2. The graph below shows the amount of money Janet earned at her new job.



How much does Janet earn per hour?

- A. \$7.50
B. \$10.00
C. \$10.50
D. \$15.00

3. The graph below shows the amount of money Johnny saved for 12 months.



Which amount is closest to Johnny's rate of savings over those 12 months?

- A. \$7.14 per month
- B. \$13.75 per month
- C. \$14.00 per month
- D. \$15.00 per month

4. What is the constant of proportionality for the table below?

x	y
-10	25
-8	20
-4	10
2	-5

- A. 5
- B. 2.5
- C. -2.5
- D. -5

5. This table on a package of dog food tells how much to feed a dog, depending on its weight.

Weight of Dog (pounds)	15	30	45
Amount of Food (scoops)	2	4	6

The amount of food in scoops (s) is related to the weight of the dog in pounds (p) by the equation $s = kp$. What is k ?

- A. 7.5
- B. $\frac{2}{15}$
- C. 1.5
- D. $\frac{4}{15}$

6. It took a race car driver 3 hours and 15 minutes to go 500 miles. What was his mean rate of speed, to the nearest tenth of a mile per hour?

- A. 142.9 mph
- B. 153.8 mph
- C. 158.7 mph
- D. 166.7 mph

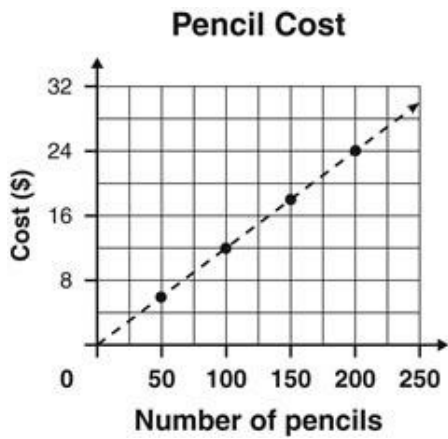
7. Tommy has a lawn service. He earns \$25 for every lawn he mows. Which of the following represents the rate of change of his income with respect to the number of lawns he mows?

- A. $\frac{2 \text{ lawns}}{\$12.50}$
- B. $\frac{2 \text{ lawns}}{\$50}$
- C. $\frac{\$12.50}{2 \text{ lawns}}$
- D. $\frac{\$50}{2 \text{ lawns}}$

8. A 14-pound bag of dog food costs \$16.24, and a 30-pound bag of dog food costs \$33.30. Which statement is **true** and can be used to determine the better buy?

- A. The unit rate per pound of a 14-pound bag is \$0.05 less than the unit rate of a 30-pound bag.
- B. The unit rate per pound of a 14-pound bag is \$0.05 more than the unit rate of a 30-pound bag.
- C. The unit rate per pound of a 14-pound bag is \$0.50 less than the unit rate of a 30-pound bag.
- D. The unit rate per pound of a 14-pound bag is \$0.50 more than the unit rate of a 30-pound bag.

9. Miranda wants to buy pencils printed with the school mascot. The graph below represents the cost for different numbers of pencils.



What is the cost per pencil?

- A. \$0.12
 B. \$0.16
 C. \$1.20
 D. \$8.30
10. The chart below shows the growth of four plants for 4 weeks.

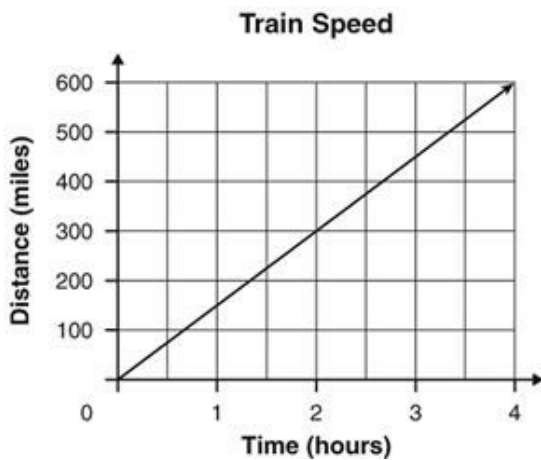
Height of Plants (cm)

	Plant 1	Plant 2	Plant 3	Plant 4
Week 1	1.8	2.0	4.5	4
Week 2	2.2	2.6	4.9	8
Week 3	2.6	2.8	5.2	15
Week 4	3.0	3.0	5.5	30

Which plant shows a constant rate of growth?

- A. Plant 1
 B. Plant 2
 C. Plant 3
 D. Plant 4

11. According to this graph, how fast is the train moving in miles per hour?



- A. 150
B. 300
C. 450
D. 600

12. Michael's car can travel 25 miles on one gallon of gas. The cost of gas is \$3.75 per gallon. Which equation would calculate the total cost of gas, t , based on the number of miles traveled, n ?

- A. $t = 0.11n$
B. $t = 0.15n$
C. $t = 1.50n$
D. $t = 6.67n$

13. One box of strawberries costs \$5. Which equation can be used to find the maximum number of boxes of strawberries a person can buy for \$30?

- A. $30 = 5n$
B. $30 = 5 + n$
C. $5 = 30n$
D. $5 = 30 + n$

14. Suppose that a butterfly can fly 82 feet in 4 seconds. A dragonfly can fly 50 feet in 2 seconds. Which can fly faster and by how much?

- A. The dragonfly is 4.5 feet per second faster.
B. The dragonfly is 20.5 feet per second faster.
C. The butterfly is 4.5 feet per second faster.
D. The butterfly is 24 feet per second faster.

15. On a map of North Carolina, 27 centimeters represents 18 miles. Based on the map, which equation would calculate the number of miles between two cities, y , when they measure x centimeters apart?

A. $y = \frac{2}{3}x$

C. $y = 9x$

B. $y = \frac{3}{2}x$

D. $y = 18x$

16. A hybrid vehicle claims to get 60 miles per gallon in the city. The cost of gas is \$3.60 per gallon. Which equation will calculate the cost of gas, c , per mile driven, m ?

A. $c = 0.06m$

C. $c = 1.67m$

B. $c = 0.60m$

D. $c = 3.60m$

17. Mike earned the amounts listed in the table below.

Hours Worked (h)	Amount Earned (E)
15	\$183.75
22	\$269.50
26	\$318.50

Which equation could be used to find the amount of money Mike earns, E , for any number of hours worked, h ?

A. $E = 18.75 + h$

C. $E = 18.75h$

B. $E = 12.25 + h$

D. $E = 12.25h$

18. Which equation represents the proportional relationship in the table?

x	y
0	0
2	-3
5	-7.5
8	-12
11	-16.5

A. $y = x - 4.5$

C. $y = -1.5x$

B. $y = x - 1.5$

D. $y = -4.5x$

19. A hot dog costs \$2 at the ballpark. Which equation shows the total cost, c , of n hot dogs?

A. $c = 2 + n$

C. $c = 2n$

B. $n = 2 + c$

D. $n = 2c$

20. Which equation could be used to represent the data in the table?

x	y
-3	-9
-1	-3
3	9
7	21

A. $y = -3x$

C. $y = x + 6$

B. $y = 3x$

D. $y = x - 3$

21. The chart below shows the number of seats in the cafeteria based on the number of tables in the cafeteria.

Number of Tables (x)	Number of Seats (y)
8	96
12	144
16	192

Which equation calculates the number of seats in the cafeteria when there are x number of tables?

A. $y = 8x$

C. $y = 16x$

B. $y = 12x$

D. $y = 48x$

22. Michelle bought the same fabric on 3 different occasions and recorded the data below.

Yards of Fabric	Total Cost
2.2	\$2.53
3.6	\$4.14
4.2	\$4.83

What was the price per yard of fabric?

- A. \$1.05
B. \$1.10
C. \$1.15
D. \$1.50
23. Abigail drew the graph below to show how the number of necklaces she makes depends on the number of days she spent making them.



How many necklaces per day does Abigail make?

- A. 10
B. 15
C. 20
D. 30

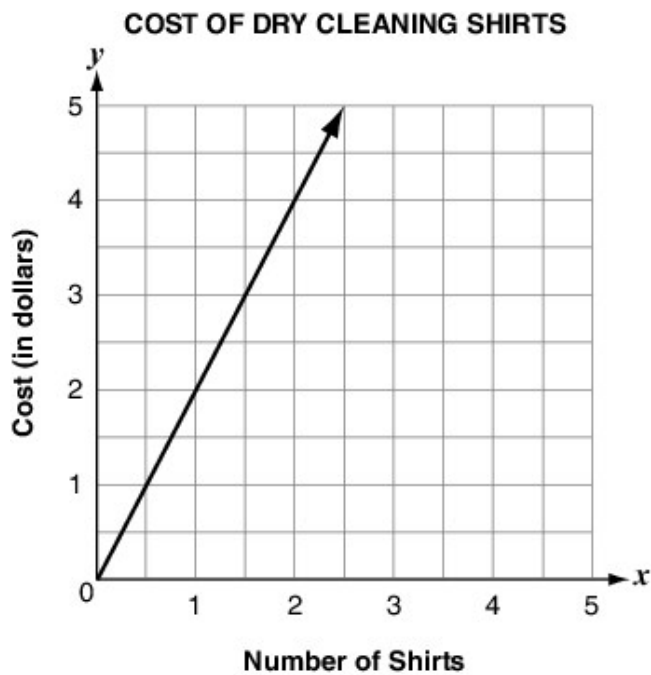
24. The graph below shows the relationship between the number of hours Linda rides her bike and the distance she travels.



How many miles does Linda travel in 1 hour?

- A. 6 miles
- B. 9 miles
- C. 12 miles
- D. 18 miles

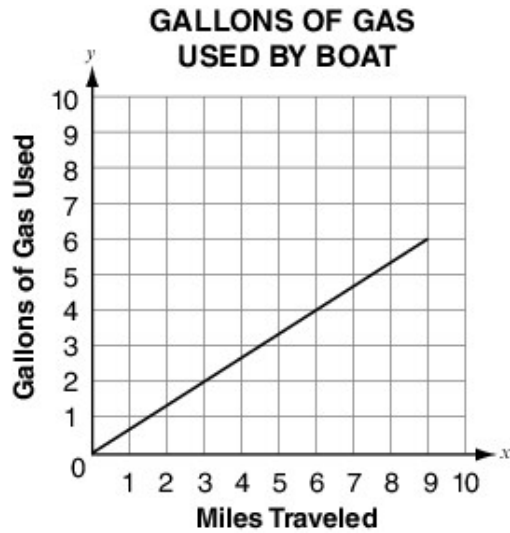
25. A dry cleaning service's costs for cleaning shirts are shown in the graph.



What is the meaning of the point $(1, 2)$ in terms of the context?

- A. The dry cleaning service charges \$1 per shirt.
- B. The dry cleaning service charges \$2 per shirt.
- C. The dry cleaning service charges \$1 for 2 shirts.
- D. The dry cleaning service charges \$2 for 2 shirts.

26. The graph below shows how many gallons of gas are used by a boat when it travels.



How many gallons of gas would the boat use to travel 24 miles?

- A. 12
B. 16
C. 21
D. 36