

1. An aircraft flies against the wind for a distance of 300 miles in 2 hours. Then the aircraft makes the return trip with the wind in 1 hour. What was the aircraft's average speed for the entire trip?
2. A certain laundry detergent recommends $\frac{1}{4}$ cup of detergent for a $\frac{1}{2}$ load of clothes. How much detergent is recommended for 4 loads of clothes? **NO CALCULATOR.**
3. Jermaine wants to know how fast he is traveling in a school bus, but he cannot see the speedometer. He records that the bus travels 1 mile in 75 seconds. How fast is Jermaine traveling in miles per hour?
4. Kira finished $\frac{2}{5}$ of a puzzle in $\frac{1}{5}$ of an hour. At this rate, how many puzzles could she finish in 1 hour? **NO CALCULATOR.**
5. Which table shows a proportional relationship between the distances on a map and the actual distances?

A.

Distance on the Map (in inches)	Actual Distance (in miles)
1	4
2	8
3	9
4	16

B.

Distance on the Map (in inches)	Actual Distance (in miles)
1	4
2	8
5	20
6	24

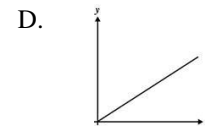
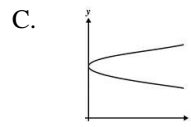
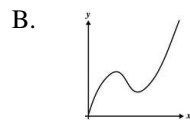
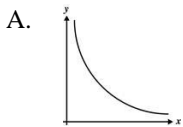
C.

Distance on the Map (in inches)	Actual Distance (in miles)
1	3
3	9
4	16
7	21

D.

Distance on the Map (in inches)	Actual Distance (in miles)
1	3
2	6
5	15
6	30

6. Which graph shows direct variation between x and y ?



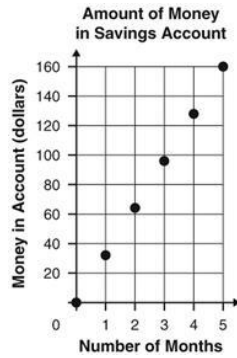
7. The student council made a profit of \$1,480 last year from sales of \$18,500 in a pizza fundraiser. Which will result in the same rate of profit?
 - A. \$52 profit for \$650 in lollipop sales
 - B. \$420 profit for \$3,500 in magazine sales
 - C. \$657 profit for \$7,300 in t-shirt sales
 - D. \$1,575 profit for \$22,500 in candy bar sales
8. Which situation best represents a proportional relationship?
 - A. Sandra sold 2 bracelets for \$3 and 3 bracelets for \$6.
 - B. Jeff ran 4 miles in 20 minutes and 6 miles in 24 minutes.
 - C. Lamont packed 27 glasses in 9 cases and 81 glasses in 27 cases.
 - D. Fernanda placed 8 pencils in 2 boxes and 16 pencils in 8 boxes.

9. 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.

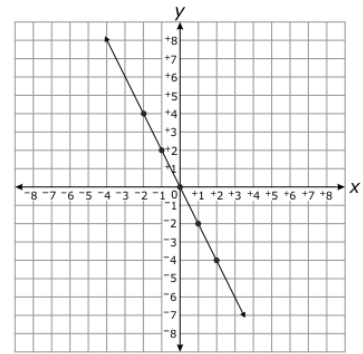
10. Jeremy started a savings account and deposited the same amount of money each month into his account.

Which is closest to the amount of money Jeremy deposits each month?

- A. \$27 B. \$32 C. \$96 D. \$160



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



12. The cost of notebooks at the school store is shown in the table below. What is the cost of one notebook?

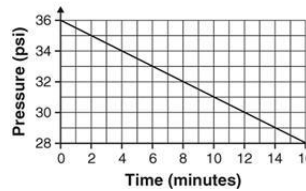
Number of Notebooks	Cost
2	\$1.50
3	\$2.25
4	\$3.00
5	\$3.75

13. Latoya drives 8 miles to work in 13 minutes. What is her average rate, in miles per hour, when rounded to the nearest whole number?

14. A tire is slowly deflating. The graph below shows the pounds per square inch (psi) of pressure as a function of time.

Tire Pressure

At what rate, in psi/minute, is the tire deflating?



15. A game inventor created a board game that has 15 pieces per game. Which equation shows the relationship between t , the total number of pieces, and n , the number of copies of the board game the inventor wants to make?

- A. $t = n + 15$ B. $t = 15n$ C. $t = \frac{n}{15}$ D. $t = \frac{15}{n}$

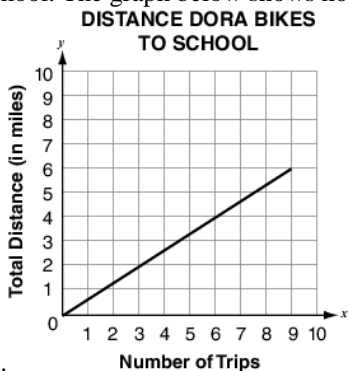
16. In a photograph, a stadium measures 8 inches across by 2 inches high. If the actual stadium measures 500 feet across, which equation can be used to find x , the height of the stadium in feet?
- A. $\frac{x}{500} = \frac{2}{8}$ B. $\frac{500}{x} = \frac{2}{8}$ C. $500 - x = 8 - 2$ D. $500 + 8 = x + 2$

17. The number of gallons of gas, g , used by a car is proportional to the number of miles, m , with a constant average miles per gallon, a . Which equation represents this relationship?
- A. $g - m = a$ B. $\frac{m + g}{2} = a$ C. $a = gm$ D. $g = am$

18. Write an equation to represent the relationship between x and y in the table below.

x	y
-2	4
-1	2
0	0
1	-2

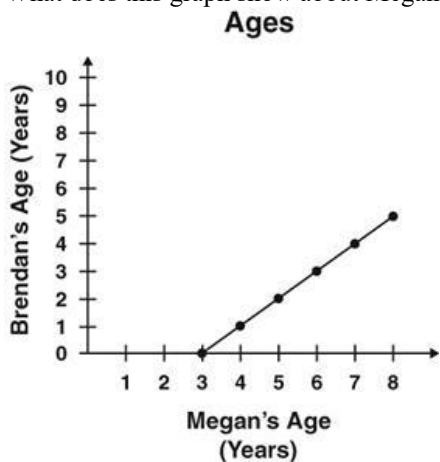
19. Dora likes to bike to school. The graph below shows how the total distance she has biked depends on the number of trips



she has made to school.

How many miles will Dora have biked in total when she has made 30 trips to school?

20. What does this graph show about Megan and Brendan's ages?



- A. Megan is three years younger than Brendan. C. Megan is twice as old as Brendan.
- B. Megan and Brendan are the same age. D. Megan is three years older than Brendan.