

1. Simplify, if possible: $5(3x) + x$
A. $16x$ B. $16x^2$ C. $8x$ D. $8x^2$
2. A daycare uses the formula $9a + 20b$ for determining the bill where 'a' represents regular business hours and 'b' represents late hours. If a child was at the day care for 20 regular business hours and 2 late hours, which would represent the bill for the week?
A. $\left(\frac{9}{20}\right) + \left(\frac{20}{2}\right)$ B. $9(2) + 20(20)$ C. $9(20) + 20(2)$ D. $9 + 20 + 2 + 20$
3. Find the numerical value of $3b^3 - b$ if $b = 2$
A. 16 B. 22 C. 214 D. 727
4. A train is traveling at an average rate of 95 mph. If a passenger has been on the train for 3 hours and 45 minutes, how far has the passenger traveled?
A. 356.25 miles B. 327.75 miles C. 27.5 miles D. 25.3 miles
5. The algebraic expression $10.6x^2 + 1007$ models the value in millions of dollars of private property loss to fire damage in the United States x years after 1970. Evaluate the expression for $x = 15$.
A. 1243 B. 1166 C. 3392 D. 26288
6. Twelve painters are able to paint 2 houses a day. How many painters would be needed to paint 5 houses in a day?
A. 5 B. 24 C. 30 D. 36
7. Using 5 gallons of gas a homeowner is able to cut her yard 18 times. How many gallons would be needed to cut the yard 40 times?
A. 3 gallons B. 11.1 gallons C. 40 gallons D. 144 gallons
8. A company charged a customer \$160 for 3 hours of limousine transportation. At this rate how much would the fee be for 5 hours of limousine's time (assuming the limousine could be rented by the hour)?
A. \$266.67 B. \$96.00 C. \$320 D. \$215.60
9. Which expression corresponds to "Five increased by the product of three and a number"?
A. $5 + \frac{3}{x}$ B. $5 + x^3$ C. $5(3 + x)$ D. $5 + 3x$
10. Which expression corresponds to "Three less than twice a number is fifteen"?
A. $3 - 2x = 15$ B. $2x - 3 = 15$ C. $3x - 2 = 15$ D. $2 - 3x = 15$

11. Solve the equation $2x - 5 = 3$, for x ?

- A. -1 B. 4 C. 8 D. 15

12. What operation would be needed to solve the following equation for x , $x + 9 = 15$

- A. Addition B. Subtraction C. Multiplication D. Division

13. There are 6 red marbles and 10 blue marbles in a bag. What is the ratio of blue marbles to total marbles?

- A. $\frac{3}{5}$ B. $\frac{3}{8}$ C. $\frac{5}{8}$ D. $\frac{5}{3}$

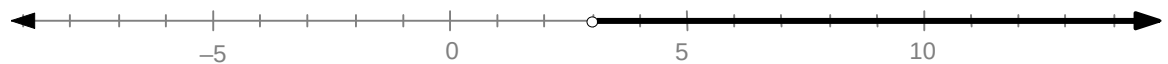
14. 7 out of 12 people like mathematics at a particular school. If 780 people attend the school how many like mathematics?

- A. 10 B. 191 C. 455 D. 1337

15. Solve the equation $3x - 4 > 8$, for x ?

- A. $x = 4$ B. $x < 4$ C. $x > 4$ D. $x \leq 4$

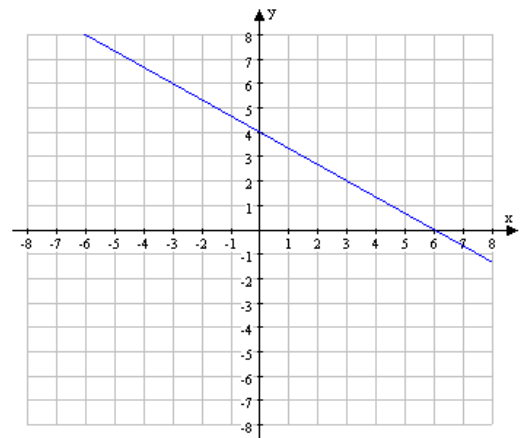
16. Which inequality describes the graph?



- A. $x < 3$ B. $x > 3$ C. $x \leq 3$ D. $x \geq 3$

17. Which equation below matches the graph shown:

- A. $y = -\frac{2}{3}x + 4$
B. $y = -\frac{2}{3}x + 6$
C. $y = -\frac{3}{2}x + 4$
D. $y = -\frac{3}{2}x + 6$



18. Consider the system of the following two linear equations:

$$\begin{aligned}x + y &= 4 \\ 3x - y &= 0\end{aligned}$$

- A. $(1, -3)$ B. $(1, 3)$ C. $(-1, -3)$ D. $(-1, 3)$

19. The hall in Ms. Jackson's house is a square, 5 feet on each side. To calculate the amount of carpet needed to cover the floor, she had to find the area of the floor. She used the formula $A = 5^2$, where 5 represents the length of one side. How many square feet of carpet did she need to carpet the hall?

- A. 5 sq. ft. B. 10 sq. ft. C. 20 sq. ft. D. 25 sq. ft.