

1. Evaluate the expression.

$$8[(5 - 2)^3 \div 9]$$

2. Evaluate.

$$\text{If } f(x) = x^2 - 2x + 1,$$

$$f(5) =$$

3. Find values of b and h that would satisfy the equation $-|b - h| = -6$.

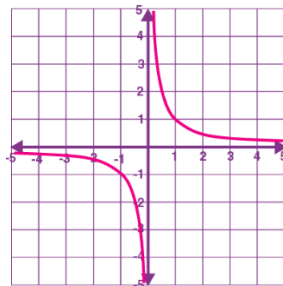
**Note that there may be more than one valid solution to this problem.*

4. At a bookstore, Taylor purchases 2 novels, 3 magazines, and 1 notebook. The novels cost \$8.99 each, the magazines cost \$3.49 each, and the notebook costs \$5.99. Which expression represents the total cost of Taylor's purchases?

5. Evaluate $\frac{m}{2v} + p^2$, for $m = -30$, $v = 5$, and $z = 2$.

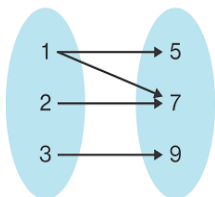
6. Write an algebraic expression to represent the phrase 'two times the sum of a number n and 4.'
7. Write an inequality to represent the sentence 'Twice the sum of a number x and 3 is no more than 10.'
8. The range of the function $y = 2x + 4$ is $\{4, 8, 12 \text{ and } 16\}$. Which four numbers must be in the domain?

9. Does the graph represent a function? Explain.

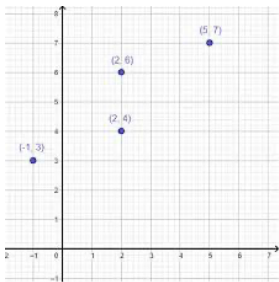


10. Circle the relationship that represents a function.

Domain Range



x	y
-3	6
-2	0
-1	-4
0	-6
1	-6



$\{(2, 4) (3, 2) (-1, 5) (2, 7)\}$

11. Solve.

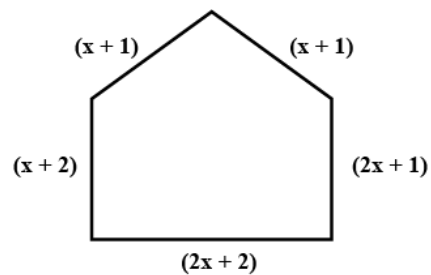
$$\frac{4}{5}c - 4 = -12$$

12. Solve.

$$3y + 2(4y - 5) = 7$$

13. Solve.

$$2x + 5 + 3x + 7 = 3(x - 4) + 2x - 1$$

14. The perimeter of the triangle is 77 centimeters. What is the value of x ?

- 15.** Solve for x.

$$\frac{x+3}{7} = \frac{x-2}{4}$$

- 16.** Calculate the 48th term in the following arithmetic sequence.

$$-48, -42, -36, -30, -24, \dots$$

- 17.** Solve the equation for w.

$$P = 2l + 2w$$

- 18.** State the x- and y-intercepts of the line with the equation

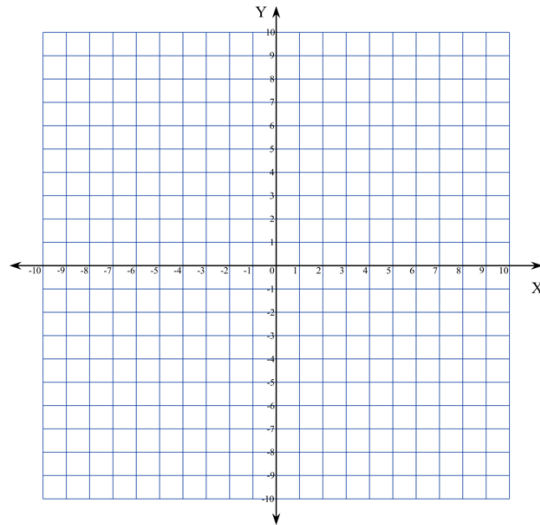
$$y = 3x - 5.$$

- 19.** What is the slope of the line that passes through the points (4, -3) and (8, -11)?

20. What is the slope of the line parallel to the graph of $3x + y = 2$?

21. Graph the equation on the coordinate plane.

$$y = -\frac{4}{5}x + 3$$



22. Solve the absolute value equation.

$$|h + 5| = 9$$

23. A ride-sharing service charges a base fare for each ride, plus an additional fee per mile traveled. This table shows the total cost for different ride distances:

Distance Travelled (miles)	0	3	6	9
Total Cost (dollars)	5	8	11	14

Write an equation in slope-intercept form that can be used to predict the total cost (y) for traveling (x) miles with the ride-sharing service.

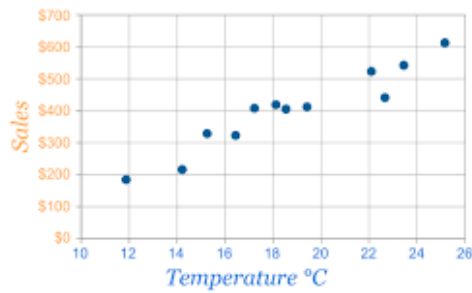
24. What is the slope of the line?



25. Consider a linear function $f(x)$ that has the values $f(-3) = -11$ and $f(2) = -1$. Find the equation of the function in slope-intercept form.
26. What is the equation of the horizontal line that passes through the point $(-5, 7)$?
27. Write the equation of the line in point slope form that passes through the points $(2, 4)$ and $(5, 8)$.
28. Marcella sells phone cases for \$25 each, and at this price, she can sell 200 phone cases per month. If Marcella reduces the price to \$20, she could sell 300 units per month. Assuming the relationship between price and sales is linear, predict the number of cases Marcella can sell to the nearest whole number if the price were \$15.

- 29.** Write an equation in point-slope form of the line that passes through the point $(-4, 3)$ and has a slope of -2 ?
- 30.** Which of the following lines has the same slope as the line given by the equation $y = -3x + 5$?
- A. $2y + 4x = 8$
 - B. $3x - 6y = 9$
 - C. $5y - 15x = -25$
 - D. $5y - 15x = -25$
 - E. $2y + 6x = -10$
- 31.** Write the equation of the line that passes through $(1, 1)$ and is parallel to the line passing through $(3, -3)$ and $(-1, 5)$.
- 32.** Kevin sells cakes for \$15 each. He must pay a \$30 fee for the kitchen where he does his baking, and spends \$5 on the ingredients for each cake. To figure out how many cakes, c , he needs to sell to make a profit, Kevin writes the following inequality:
- $$15c > 5c + 30$$
- Solve the inequality to find the minimum number of ice cream cones that Blake must sell to make a profit.

- 33.** Bryan wants to know how much the temperature affects the sales for his ice cream shop. He creates the following scatter plot that shows his sales in dollars, as a function of the temperature in degrees Celsius.



Which of the following correlation coefficients is most likely associated with Bryan's data set?

- a) $r = 0.35$
- b) $r = 0.87$
- c) $r = -0.87$
- d) $r = -0.35$

- 34.** Solve the inequality.

$$5(r - 2) \geq -5(2r - 1)$$

- 35.** Solve the compound inequality.

$$3 \leq x - 6 < 12$$

- 36.** Zettie is training for a 5K race. The following table shows his times for each month of his training program.

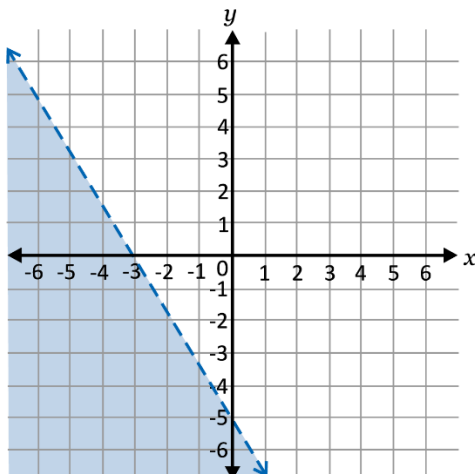
Month	Month number	Average time (minutes)
January	0	40
February	1	38
March	2	39
April	3	38
May	4	33
June	5	30

Using a calculator, Zettie performed a linear regression and wrote the following equation for the line of best fit:

$$y = -2x + 42$$

Using this equation, how many long might it take Zettie to run 5K in August (month number 7)?

- 37.** Write an inequality to fit the graph shown below.

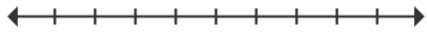


38. Solve the inequality.

$$|5 - 3x| \geq 15$$

39. Solve and graph the solution.

$$-8(2x + 4) \leq -16$$



40. Solve and graph the solution.

$$3x - 4 \geq 2(x - 4)$$

