A store sells two different-sized containers of a certain Greek yogurt. The store's sales of this Greek yogurt totaled $1{,}277.94$ dollars last month. The equation $5.48x + 7.30y = 1{,}277.94$ represents this situation, where x is the number of smaller containers sold and y is the number of larger containers sold. According to the equation, which of the following represents the price, in dollars, of each smaller container?

A. 5.48

B. $7.30y$

C. 7.30

D. $5.48x$

Line k is defined by $y = 3x + 15$. Line j is perpendicular to line k in the xy-plane. What is the slope of line j?

A. $-\frac{1}{3}$

B. $-\frac{1}{12}$

C. $-\frac{1}{18}$

D. $-\frac{1}{45}$

$$3a + 4b = 25$$

A shipping company charged a customer $25 to ship some small boxes and some large boxes. The equation above represents the relationship between a, the number of small boxes, and b, the number of large boxes, the customer had shipped. If the customer had 3 small boxes shipped, how many large boxes were shipped?

A. 3

B. 4

C. 5

D. 6

What is the equation of the line that passes through the point $(0, 5)$ and is parallel to the graph of $y = 7x + 4$ in the *xy*-plane?

A. $y = 5x$

B. $y = 7x + 5$

C. $y = 7x$

D. $y = 5x + 7$

$$x + y = 75$$

The equation above relates the number of minutes, x, Maria spends running each day and the number of minutes, y, she spends biking each day. In the equation, what does the number 75 represent?

 A. The number of minutes spent running each day

 B. The number of minutes spent biking each day

 C. The total number of minutes spent running and biking each day

 D. The number of minutes spent biking for each minute spent running

A total of 364 paper straws of equal length were used to construct two types of polygons: triangles and rectangles. The triangles and rectangles were constructed so that no two polygons had a common side. The equation $3x + 4y = 364$ represents this situation, where x is the number of triangles constructed and y is the number of rectangles constructed. What is the best interpretation of $(x, y) = (24, 73)$ in this context?

A. If 24 triangles were constructed, then 73 rectangles were constructed.

B. If 24 triangles were constructed, then 73 paper straws were used.

C. If 73 triangles were constructed, then 24 rectangles were constructed.

D. If 73 triangles were constructed, then 24 paper straws were used.

The equation $y = 0.1x$ models the relationship between the number of different pieces of music a certain pianist practices, y, during an x-minute practice session. How many pieces did the pianist practice if the session lasted 30 minutes?

A. 1

B. 3

C. 10

D. 30
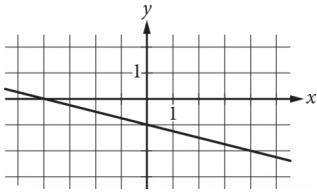
Which of the following is an equation of the graph shown in the *xy*-plane above?

A. $y = -\dfrac{1}{4}x - 1$

B. $y = -x - 4$

C. $y = -x - \dfrac{1}{4}$

D. $y = -4x - 1$

An employee at a restaurant prepares sandwiches and salads. It takes the employee 1.5 minutes to prepare a sandwich and 1.9 minutes to prepare a salad. The employee spends a total of 46.1 minutes preparing x sandwiches and y salads. Which equation represents this situation?

A. $1.9x + 1.5y = 46.1$

B. $1.5x + 1.9y = 46.1$

C. $x + y = 46.1$

D. $30.7x + 24.3y = 46.1$

The *y*-intercept of the graph of $12x + 2y = 18$ in the *xy*-plane is $(0, y)$. What is the value of y?
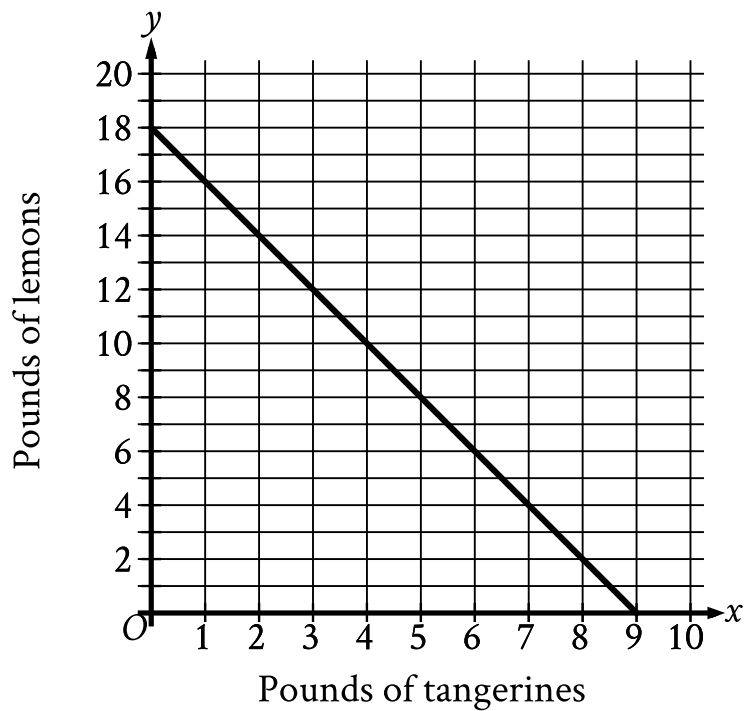
The graph shows the possible combinations of the number of pounds of tangerines and lemons that could be purchased for $18 at a certain store. If Melvin purchased lemons and 4 pounds of tangerines for a total of $18, how many pounds of lemons did he purchase?

A. 7

B. 10

C. 14

D. 16

A city's total expense budget for one year was x million dollars. The city budgeted y million dollars for departmental expenses and 201 million dollars for all other expenses. Which of the following represents the relationship between x and y in this context?

A. $x+y=201$

B. $x-y=201$

C. $2x-y=201$

D. $y-x=201$

$$y = -4x + 40$$

Which table gives three values of x and their corresponding values of y for the given equation?

A.

x	y
0	0
1	-4
2	-8

B.

x	y
0	40
1	44
2	48

C.

x	y
0	40
1	36
2	32

D.

x	y
0	0
1	4
2	8

$$4x + 3y = 24$$

Mario purchased 4 binders that cost x dollars each and 3 notebooks that cost y dollars each. If the given equation represents this situation, which of the following is the best interpretation of 24 in this context?

A. The total cost, in dollars, for all binders purchased

B. The total cost, in dollars, for all notebooks purchased

C. The total cost, in dollars, for all binders and notebooks purchased

D. The difference in the total cost, in dollars, between the number of binders and notebooks purchased

A gardener buys two kinds of fertilizer. Fertilizer A contains 60% filler materials by weight and Fertilizer B contains 40% filler materials by weight. Together, the fertilizers bought by the gardener contain a total of 240 pounds of filler materials. Which equation models this relationship, where x is the number of pounds of Fertilizer A and y is the number of pounds of Fertilizer B?

A. $0.4x + 0.6y = 240$

B. $0.6x + 0.4y = 240$

C. $40x + 60y = 240$

D. $60x + 40y = 240$

In the *xy*-plane, a line has a slope of 6 and passes through the point $(0,8)$. Which of the following is an equation of this line?

A. $y = 6x + 8$

B. $y = 6x + 48$

C. $y = 8x + 6$

D. $y = 8x + 48$

The equation $40x + 20y = 160$ represents the number of sweaters, x, and number of shirts, y, that Yesenia purchased for $160. If Yesenia purchased 2 sweaters, how many shirts did she purchase?

A. 3

B. 4

C. 8

D. 40

Tony spends $80 per month on public transportation. A 10-ride pass costs $12.50, and a single-ride pass costs $1.50. If g represents the number of 10-ride passes Tony buys in a month and t represents the number of single-ride passes Tony buys in a month, which of the following equations best represents the relationship between g and t ?

A. $g + t = 80$

B. $g + t = 1.50 + 12.50$

C. $1.50g + 12.50t = 80$

D. $12.50g + 1.50t = 80$

Characteristics for Rock Types

Rock type	Weight per volume (lb/ft^3)	Cost per pound
Basalt	180	$0.18
Granite	165	$0.09
Limestone	120	$0.03
Sandstone	135	$0.22

A city is planning to build a rock retaining wall, a monument, and a garden in a park. The table above shows four rock types that will be considered for use in the project. Also shown for each rock type is its weight per volume, in pounds per cubic foot (lb/ft^3), and the cost per pound, in dollars. The equation $0.03(120w)+0.18(180z)+3{,}385.80=7{,}576.20$ gives the total cost, in dollars, of the rocks used in the project in terms of the number of ft^3 of limestone, w, and the number of ft^3 of basalt, z. All four rock types are used in the project. Which of the following is the best interpretation of 3,385.80 in this context?

A. The cost of the granite and sandstone needed for the project

B. The cost of the basalt and limestone needed for the project

C. The cost of the basalt needed for the project

D. The cost of the sandstone needed for the project

Vivian bought party hats and cupcakes for $71. Each package of party hats cost $3, and each cupcake cost $1. If Vivian bought 10 packages of party hats, how many cupcakes did she buy?

x	y
1	5
2	7
3	9
4	11

The table above shows some pairs of *x* values and *y* values. Which of the following equations could represent the relationship between *x* and *y* ?

A. $y = 2x + 3$

B. $y = 3x - 2$

C. $y = 4x - 1$

D. $y = 5x$

Line k is defined by $y = \frac{1}{4}x + 1$. Line j is parallel to line k in the xy-plane. What is the slope of j?

For a camping trip a group bought x one-liter bottles of water and y three-liter bottles of water, for a total of 240 liters of water. Which equation represents this situation?

A. $x + 3y = 240$

B. $x + y = 240$

C. $3x + 3y = 240$

D. $3x + y = 240$

A teacher is creating an assignment worth 70 points. The assignment will consist of questions worth 1 point and questions worth 3 points. Which equation represents this situation, where x represents the number of 1-point questions and y represents the number of 3-point questions?

A. $4xy = 70$

B. $4(x + y) = 70$

C. $3x + y = 70$

D. $x + 3y = 70$

A shipment consists of 5-pound boxes and 10-pound boxes with a total weight of 220 pounds. There are 13 10-pound boxes in the shipment. How many 5-pound boxes are in the shipment?

A. 5

B. 10

C. 13

D. 18

$$y = 70x + 8$$

Which table gives three values of x and their corresponding values of y for the given equation?

A.

x	y
0	8
2	148
4	288

B.

x	y
0	70
2	78
4	86

C.

x	y
0	70
2	140
4	280

D.

x	y
0	8
2	132
4	272

$$F = 2.50x + 7.00y$$

In the equation above, F represents the total amount of money, in dollars, a food truck charges for x drinks and y salads. The price, in dollars, of each drink is the same, and the price, in dollars, of each salad is the same. Which of the following is the best interpretation for the number 7.00 in this context?

A. The price, in dollars, of one drink

B. The price, in dollars, of one salad

C. The number of drinks bought during the day
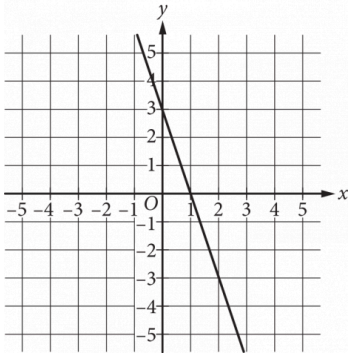
D. The number of salads bought during the day
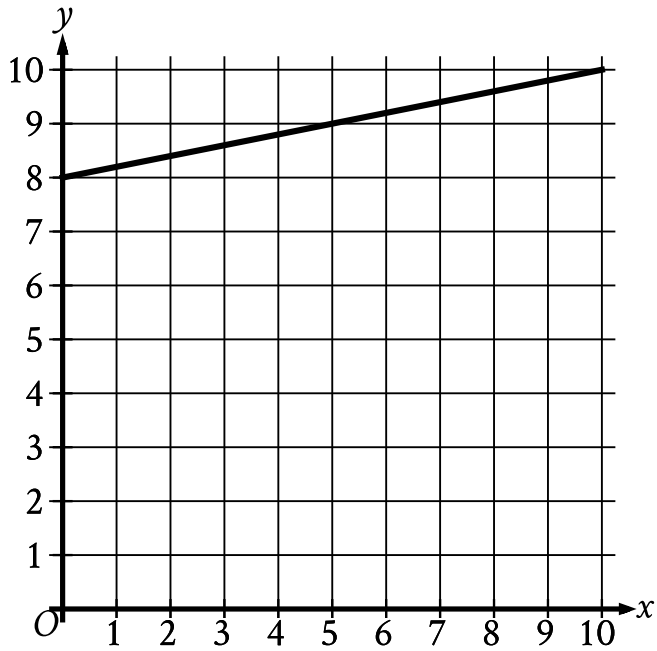
What is the *y*-intercept of the line graphed?

A. $(0, -8)$

B. $\left(0, -\frac{1}{8}\right)$

C. $(0, 0)$

D. $(0, 8)$

The equation $46 = 2a + 2b$ gives the relationship between the side lengths a and b of a certain parallelogram. If $a = 9$, what is the value of b?

The *y*-intercept of the graph of $y = -6x - 32$ in the *xy*-plane is $(0, y)$. What is the value of y?

What is the equation of the line shown in the *xy*-plane above?

A. $y = 3x - 3$

B. $y = -3x + 3$

C. $y = \dfrac{1}{3}x - 3$

D. $y = -\dfrac{1}{3}x + 3$

Davio bought some potatoes and celery. The potatoes cost $0.69 per pound, and the celery cost $0.99 per pound. If Davio spent $5.34 in total and bought twice as many pounds of celery as pounds of potatoes, how many pounds of celery did Davio buy?

A. 2

B. 2.5

C. 2.67

D. 4

What value of p satisfies the equation $5p + 180 = 250$?

A. 14

B. 65

C. 86

D. 250

$$3x + 21 = 3x + k$$

In the given equation, k is a constant. The equation has infinitely many solutions. What is the value of k?

The perimeter of an isosceles triangle is 83 inches. Each of the two congruent sides of the triangle has a length of 24 inches. What is the length, in inches, of the third side?

$$\frac{4x}{5} = 20$$

In the equation above, what is the value of x ?

A. 25

B. 24

C. 16

D. 15

Which of the following is equivalent to $4x + 6 = 12$?

A. $2x + 4 = 6$

B. $x + 3 = 3$

C. $3x + 2 = 4$

D. $2x + 3 = 6$

One pound of grapes costs $2. At this rate, how many dollars will c pounds of grapes cost?

A. $2c$

B. $2+c$

C. $\dfrac{2}{c}$

D. $\dfrac{c}{2}$

A principal used a total of 25 flags that were either blue or yellow for field day. The principal used 20 blue flags. How many yellow flags were used?

A. 5

B. 20

C. 25

D. 30

$$8x = 88$$

What value of x is the solution to the given equation?

A. 11

B. 80

C. 96

D. 704

$$10 = 2x + 4$$

How many solutions exist to the equation shown above?

A. None

B. Exactly 1

C. Exactly 3

D. Infinitely many

If $2x = 12$, what is the value of $9x$?

Cathy has *n* CDs. Gerry has 3 more than twice the number of CDs that Cathy has. In terms of *n*, how many CDs does Gerry have?

A. $3n - 2$

B. $3n + 2$

C. $2n - 3$

D. $2n + 3$

A gym charges its members a onetime $36 enrollment fee and a membership fee of $19 per month. If there are no charges other than the enrollment fee and the membership fee, after how many months will a member have been charged a total of $188 at the gym?

A. 4

B. 5

C. 8

D. 10

If $7x = 28$, what is the value of $8x$?

A. 21

B. 32

C. 168

D. 224

If $4x + 2 = 12$, what is the value of $16x + 8$?

A. 40

B. 48

C. 56

D. 60

For what value of w does
$w - 10 = 2(w + 5)$?

A. 5

B. 0

C. -15

D. -20

If $\dfrac{2n}{5} = 10$, what is the

value of $2n - 1$?

A. 24

B. 49

C. 50

D. 99

If $\dfrac{1}{2}x - \dfrac{1}{6}x = 1$, what is the value of x?

A. -4

B. $\dfrac{1}{3}$

C. 3

D. 6

If $2 + x = 60$, what is the value of $16 + 8x$?

If $3x + 2 = 8$, what is the value of $9x + 6$?

Henry receives a $60.00 gift card to pay for movies online. He uses his gift card to buy 3 movies for $7.50 each. If he spends the rest of his gift card balance on renting movies for $1.50 each, how many movies can Henry rent?

A. 10

B. 25

C. 35

D. 40

A librarian has 43 books to distribute to a group of children. If he gives each child 2 books, he will have 7 books left over. How many children are in the group?

A. 15

B. 18

C. 25

D. 29

$6x + k = 6x + 5$

In the given equation, k is a constant. If the equation has infinitely many solutions, what is the value of k?

If $5x = 20$, what is the value of $15x$?

A. 7

B. 12

C. 23

D. 60

What is the solution to the equation $2x + 3 = 7$?

A. 1

B. 1.5

C. 2

D. 4

If $x = 40$, what is the value of $x + 6$?

A. 34

B. 40

C. 46

D. 64

Valentina bought two containers of beads. In the first container 30% of the beads are red, and in the second container 70% of the beads are red. Together, the containers have at least 400 red beads. Which inequality shows this relationship, where x is the total number of beads in the first container and y is the total number of beads in the second container?

A. $0.3x + 0.7y \geq 400$

B. $0.7x + 0.3y \leq 400$

C. $\dfrac{x}{3} + \dfrac{y}{7} \leq 400$

D. $30x + 70y \geq 400$

The total cost, in dollars, to rent a surfboard consists of a $25 service fee and a $10 per hour rental fee. A person rents a surfboard for t hours and intends to spend a maximum of $75 to rent the surfboard. Which inequality represents this situation?

A. $10t \leq 75$

B. $10 + 25t \leq 75$

C. $25t \leq 75$

D. $25 + 10t \leq 75$

On a car trip, Rhett and Jessica each drove for part of the trip, and the total distance they drove was under 220 miles. Rhett drove at an average speed of $35\ \text{miles per hour (mph)}$, and Jessica drove at an average speed of $40\ \text{mph}$. Which of the following inequalities represents this situation, where r is the number of hours Rhett drove and j is the number of hours Jessica drove?

A. $35r + 40j > 220$

B. $35r + 40j < 220$

C. $40r + 35j > 220$

D. $40r + 35j < 220$

A bakery sells trays of cookies. Each tray contains at least 50 cookies but no more than 60. Which of the following could be the total number of cookies on 4 trays of cookies?
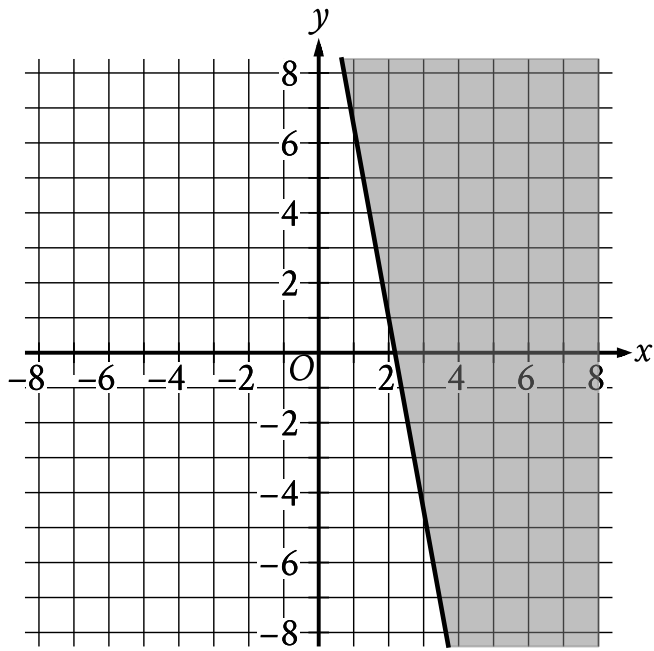
A. 165

B. 205

C. 245

D. 285

Tom scored 85, 78, and 98 on his first three exams in history class. Solving which inequality gives the score, G, on Tom's fourth exam that will result in a mean score on all four exams of at least 90 ?

A. $90 - (85 + 78 + 98) \leq 4G$

B. $4G + 85 + 78 + 98 \geq 360$

C. $\dfrac{(G + 85 + 78 + 98)}{4} \geq 90$

D. $\dfrac{(85 + 78 + 98)}{4} \geq 90 - 4G$

The shaded region shown represents solutions to an inequality. Which ordered pair (x, y) is a solution to this inequality?

A. $(0, -4)$

B. $(0, 4)$

C. $(-4, 0)$

D. $(4, 0)$

Normal body temperature for an adult is between $97.8°F$ and $99°F$, inclusive. If Kevin, an adult male, has a body temperature that is considered to be normal, which of the following could be his body temperature?

A. $96.7°F$

B. $97.6°F$

C. $97.9°F$

D. $99.7°F$

Which of the following ordered pairs (x, y) satisfies
the inequality $5x - 3y < 4$?

1. $(1, 1)$
2. $(2, 5)$
3. $(3, 2)$

A. I only

B. II only

C. I and II only

D. I and III only

A clothing store is having a sale on shirts and pants. During the sale, the cost of each shirt is $15 and the cost of each pair of pants is $25. Geoff can spend at most $120 at the store. If Geoff buys s shirts and p pairs of pants, which of the following must be true?

A. $15s + 25p \leq 120$

B. $15s + 25p \geq 120$

C. $25s + 15p \leq 120$

D. $25s + 15p \geq 120$

An elementary school teacher is ordering x workbooks and y sets of flash cards for a math class. The teacher must order at least 20 items, but the total cost of the order must not be over $80. If the workbooks cost $3 each and the flash cards cost $4 per set, which of the following systems of inequalities models this situation?

A.
$$x+y \geq 20$$
$$3x+4y \leq 80$$

B.
$$x+y \geq 20$$
$$3x+4y \geq 80$$

C.
$$3x+4y \leq 20$$
$$x+y \geq 80$$

D.
$$x+y \leq 20$$
$$3x+4y \geq 80$$

Maria plans to rent a boat. The boat rental costs $60 per hour, and she will also have to pay for a water safety course that costs $10. Maria wants to spend no more than $280 for the rental and the course. If the boat rental is available only for a whole number of hours, what is the maximum number of hours for which Maria can rent the boat?

Monarch butterflies can fly only with a body temperature of at least 55.0 degrees Fahrenheit ($^\circ F$). If a monarch butterfly's body temperature is $51.3\,^\circ F$, what is the minimum increase needed in its body temperature, in $^\circ F$, so that it can fly?

A. 1.3

B. 3.7

C. 5.0

D. 6.3

A cleaning service that cleans both offices and homes can clean at most 14 places per day. Which inequality represents this situation, where f is the number of offices and h is the number of homes?

A. $f + h \leq 14$

B. $f + h \geq 14$

C. $f - h \leq 14$

D. $f - h \geq 14$

Hiro and Sofia purchased shirts and pants from a store. The price of each shirt purchased was the same and the price of each pair of pants purchased was the same. Hiro purchased 4 shirts and 2 pairs of pants for $86, and Sofia purchased 3 shirts and 5 pairs of pants for $166. Which of the following systems of linear equations represents the situation, if x represents the price, in dollars, of each shirt and y represents the price, in dollars, of each pair of pants?

A.
$$4x + 2y = 86$$
$$3x + 5y = 166$$

B.
$$4x + 3y = 86$$
$$2x + 5y = 166$$

C.
$$4x + 2y = 166$$
$$3x + 5y = 86$$

D.
$$4x + 3y = 166$$
$$2x + 5y = 86$$

$$5x = 15$$
$$-4x + y = -2$$

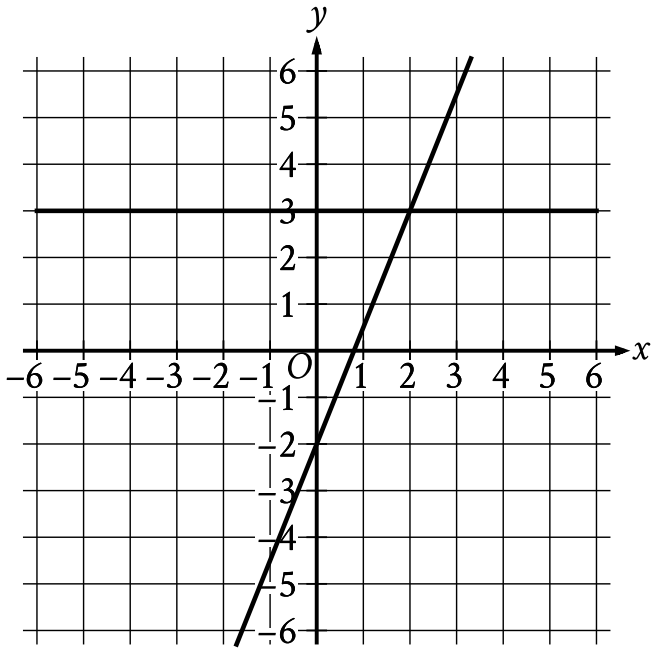The solution to the given system of equations is (x, y). What is the value of $x + y$?

A. -17

B. -13

C. 13

D. 17

The graph of a system of linear equations is shown. What is the solution (x, y) to the system?

A. $(0, 3)$

B. $(1, 3)$

C. $(2, 3)$

D. $(3, 3)$

A petting zoo sells two types of tickets. The standard ticket, for admission only, costs $5. The premium ticket, which includes admission and food to give to the animals, costs $12. One Saturday, the petting zoo sold a total of 250 tickets and collected a total of $2,300 from ticket sales. Which of the following systems of equations can be used to find the number of standard tickets, s, and premium tickets, p, sold on that Saturday?

A.
$$s + p = 250$$
$$5s + 12p = 2,300$$

B.
$$s + p = 250$$
$$12s + 5p = 2,300$$

C.
$$5s + 12p = 250$$
$$s + p = 2,300$$

D.
$$12s + 5p = 250$$
$$s + p = 2,300$$

$$x = 10$$
$$y = x + 21$$

The solution to the given system of equations is (x, y). What is the value of y?

A. 2.1

B. 10

C. 21

D. 31

$$y = 2x + 3$$
$$x = 1$$

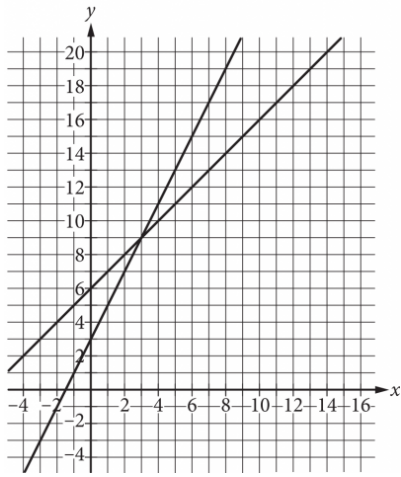What is the solution (x,y) to the given system of equations?

A. $(1,2)$

B. $(1,5)$

C. $(2,3)$

D. $(2,7)$

A system of two linear equations is graphed in the *xy*-plane below.

Which of the following points is the solution to the system of equations?

A. $(3,9)$

B. $(6,15)$

C. $(8,10)$

D. $(12,18)$

$$y = 4x - 9$$
$$y = 19$$

What is the solution (x, y) to the given system of equations?

A. $(4, 19)$

B. $(7, 19)$

C. $(19, 4)$

D. $(19, 7)$

$$x = 5$$
$$y = x - 8$$

Which of the following points (x, y) is the solution to the given system of equations in the xy-plane?

A. $(0, 0)$

B. $(5, -3)$

C. $(5, -8)$

D. $(5, 8)$

Connor has c dollars and Maria has m dollars. Connor has 4 times as many dollars as Maria, and together they have a total of $\$25.00$. Which system of equations represents this situation?

A. $c = 4m$
   $c + m = 25$

B. $m = 4c$
   $c + m = 25$

C. $c = 25m$
   $c + m = 4$

D. $m = 25c$
   $c + m = 4$

A dance teacher ordered outfits for students for a dance recital. Outfits for boys cost $26, and outfits for girls cost $35. The dance teacher ordered a total of 28 outfits and spent $881. If *b* represents the number of outfits the dance teacher ordered for boys and *g* represents the number of outfits the dance teacher ordered for girls, which of the following systems of equations can be solved to find *b* and *g* ?

A. $26b + 35g = 28$
$b + g = 881$

B. $26b + 35g = 881$
$b + g = 28$

C. $26g + 35b = 28$
$b + g = 881$

D. $26g + 35b = 881$
$b + g = 28$

$$x+y=20$$
$$2(x+y)+3y=85$$

If (x,y) is the solution to the given system of equations, what is the value of y ?

A. 10

B. 15

C. 60

D. 65

$$y = -3x$$
$$4x + y = 15$$

The solution to the given system of equations is (x, y). What is the value of x?

A. 1

B. 5

C. 15

D. 45

$$3x + y = 29$$
$$x = 2$$

If (x, y) is the solution to the given system of equations, what is the value of y?

An online bookstore sells novels and magazines. Each novel sells for $4, and each magazine sells for $1. If Sadie purchased a total of 11 novels and magazines that have a combined selling price of $20, how many novels did she purchase?

A. 2

B. 3

C. 4

D. 5

A discount airline sells a certain number of tickets, x, for a flight for $90 each. It sells the number of remaining tickets, y, for $250 each. For a particular flight, the airline sold 120 tickets and collected a total of $27,600 from the sale of those tickets. Which system of equations represents this relationship between x and y ?

A. $\begin{cases} x+y=120 \\ 90x+250y=27{,}600 \end{cases}$

B. $\begin{cases} x+y=120 \\ 90x+250y=120(27{,}600) \end{cases}$

C. $\begin{cases} x+y=27{,}600 \\ 90x+250y=120(27{,}600) \end{cases}$

D. $\begin{cases} 90x=250y \\ 120x+120y=27{,}600 \end{cases}$

Angela is playing a video game. In this game, players can score points only by collecting coins and stars. Each coin is worth c points, and each star is worth s points.

- The first time she played, Angela scored 700 points. She collected 20 coins and 10 stars.
- The second time she played, Angela scored 850 points. She collected 25 coins and 12 stars.

Which system of equations can be used to correctly determine the values of c and s?

A.
$$10c + 20s = 700$$
$$12c + 25s = 850$$

B.
$$20c + 10s = 700$$
$$25c + 12s = 850$$

C.
$$20c + 700s = 10$$
$$25c + 850s = 12$$

D.
$$700c + 20s = 10$$
$$850c + 25s = 12$$

A movie theater charges $11 for each full-price ticket and $8.25 for each reduced-price ticket. For one movie showing, the theater sold a total of 214 full-price and reduced-price tickets for $2,145. Which of the following systems of equations could be used to determine the number of full-price tickets, f, and the number of reduced-price tickets, r, sold?

A.
$$f+r=2,145$$
$$11f+8.25r=214$$

B.
$$f+r=214$$
$$11f+8.25r=2,145$$

C.
$$f+r=214$$
$$8.25f+11r=2,145$$

D.
$$f+r=2,145$$
$$8.25f+11r=214$$

$$2x + 7y = 9$$
$$8x + 28y = a$$

In the given system of equations, a is a constant. If the system has infinitely many solutions, what is the value of a ?

A. 4

B. 9

C. 36

D. 54

The front of a roller-coaster car is at the bottom of a hill and is 15 feet above the ground. If the front of the roller-coaster car rises at a constant rate of 8 feet per second, which of the following equations gives the height h, in feet, of the front of the roller-coaster car s seconds after it starts up the hill?

A. $h = 8s + 15$

B. $h = 15s + \dfrac{335}{8}$

C. $h = 8s + \dfrac{335}{15}$

D. $h = 15s + 8$

If f is the function defined by $f(x) = \dfrac{2x-1}{3}$, what is the value of $f(5)$?

A. $\dfrac{4}{3}$

B. $\dfrac{7}{3}$

C. 3

D. 9

$$d = 16t$$

The given equation represents the distance d, in inches, where t represents the number of seconds since an object started moving. Which of the following is the best interpretation of 16 in this context?

A. The object moved a total of 16 inches.

B. The object moved a total of $16t$ inches.

C. The object is moving at a rate of 16 inches per second.

D. The object is moving at a rate of $\frac{1}{16}$ inches per second.

The function g is defined by $g(x) = -x + 8$.
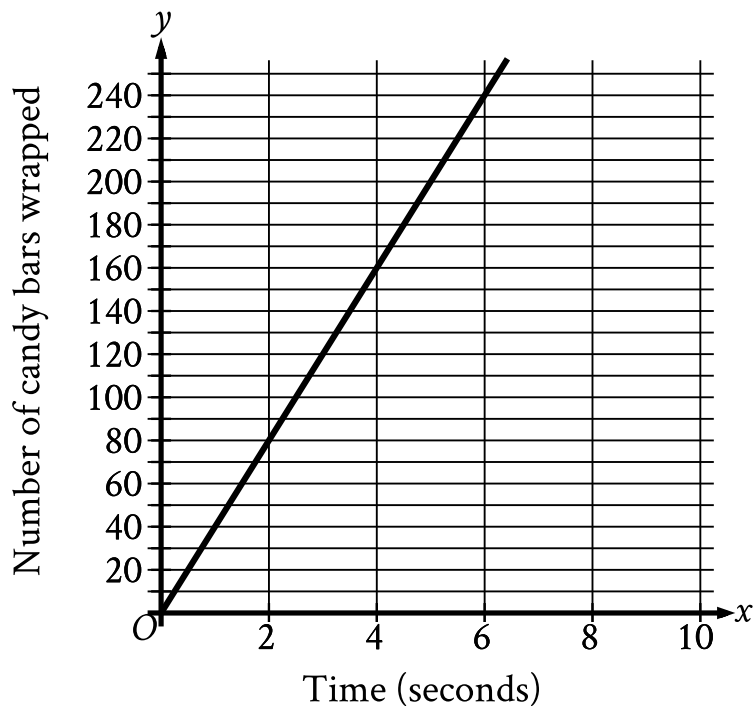
What is the value of $g(0)$?

A. -8

B. 0

C. 4

D. 8

The line graphed in the *xy*-plane below models the total cost, in dollars, for a cab ride, *y*, in a certain city during nonpeak hours based on the number of miles traveled, *x*.

Total Cost for a Cab Ride
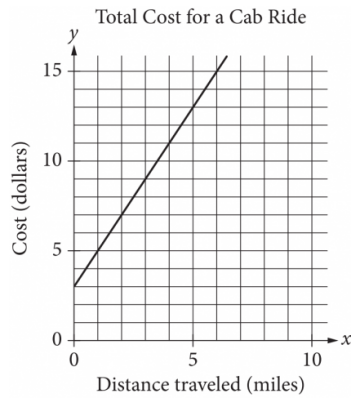
According to the graph, what is the cost for each additional mile traveled, in dollars, of a cab ride?

A. $2.00

B. $2.60

C. $3.00

D. $5.00

The graph shown models the number of candy bars a certain machine wraps with a label in x seconds.

According to the graph, what is the estimated number of candy bars the machine wraps with a label per second?

A. 2

B. 40

C. 78

D. 80

x	$f(x)$
1	5
3	13
5	21

Some values of the linear function f are shown in the table above.

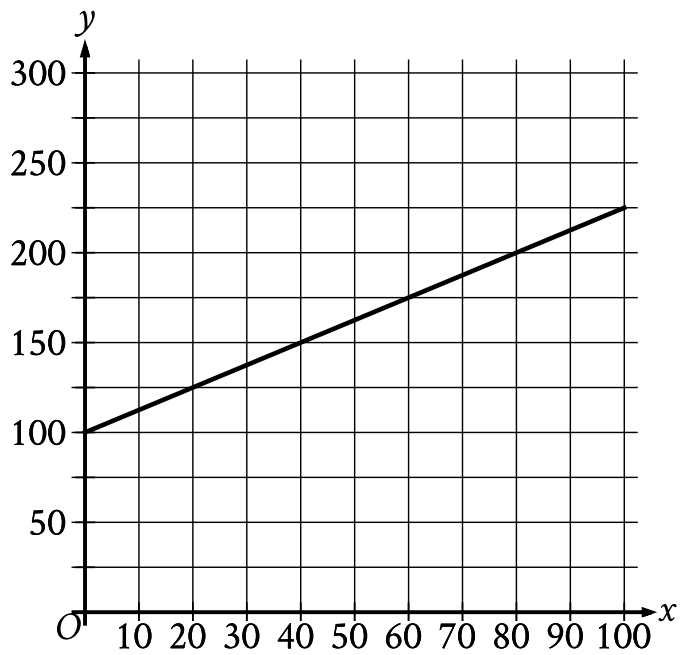Which of the following defines f?

A. $f(x) = 2x + 3$

B. $f(x) = 3x + 2$

C. $f(x) = 4x + 1$

D. $f(x) = 5x$

The cost y, in dollars, for a manufacturer to make x rings is represented by the line shown.

What is the cost, in dollars, for the manufacturer to make 60 rings?

A. 100

B. 125

C. 175

D. 225

The function h is defined by $h(x) = 3x - 7$. What is the value of $h(-2)$?

A. -13

B. -10

C. 10

D. 13

For the function f, the graph of $y = f(x)$ in the xy-plane has a slope of 3 and passes through the point $(0, -8)$. Which equation defines f?

A. $f(x) = 3x$

B. $f(x) = 3x - 8$

C. $f(x) = 3x + 5$

D. $f(x) = 3x + 11$

Marisol drove 3 hours from City A to City B. The equation below estimates the distance d, in miles, Marisol traveled after driving for t hours.

$d = 45t$

Which of the following does 45 represent in the equation?

A. Marisol took 45 trips from City A to City B.

B. The distance between City A and City B is 45 miles.

C. Marisol drove at an average speed of about 45 miles per hour.

D. It took Marisol 45 hours to drive from City A to City B.

$$s = 40 + 3t$$

The equation gives the speed s, in miles per hour, of a certain car t seconds after it began to accelerate. What is the speed, in miles per hour, of the car 5 seconds after it began to accelerate?

A. 40

B. 43

C. 45

D. 55

$$T = 1,000 + 18h$$

In the equation above, T represents Brittany's total take-home pay, in dollars, for her first week of work, where h represents the number of hours she worked that week and 1,000 represents a sign-on bonus. If Brittany's total take-home pay was $1,576, for how many hours was Brittany paid for her first week of work?

A. 16

B. 32

C. 55

D. 88

The function g is defined as $g(x) = 5x + a$, where *a* is a constant. If $g(4) = 31$, what is the value of *a* ?

A. 30

B. 22

C. 11

D. −23

The function f is defined by the equation $f(x) = 100x + 2$. What is the value of $f(x)$ when $x = 9$?

A. 111

B. 118

C. 900

D. 902

On January 1, 2015, a city's minimum hourly wage was $9.25. It will increase by $0.50 on the first day of the year for the next 5 years. Which of the following functions best models the minimum hourly wage, in dollars, x years after January 1, 2015, where $x = 1, 2, 3, 4, 5$?

A. $f(x) = 9.25 - 0.50x$

B. $f(x) = 9.25x - 0.50$

C. $f(x) = 9.25 + 0.50x$

D. $f(x) = 9.25x + 0.50$

The length, y, of a white whale was 162 **centimeters** (cm) when it was born and increased an average of $4.8\ \mathrm{cm}$ per month for the first 12 months after it was born. Which equation best represents this situation, where x is the number of months after the whale was born and y is the length, in cm, of the whale?

A. $y = 162x$

B. $y = 162x + 162$

C. $y = 4.8x + 4.8$

D. $y = 4.8x + 162$

The function f is defined by $f(x) = \frac{1}{10}x - 2$. What is the y-intercept of the graph of $y = f(x)$ in the xy-plane?

A. $(-2, 0)$

B. $(0, -2)$

C. $\left(0, \frac{1}{10}\right)$

D. $\left(\frac{1}{10}, 0\right)$

In the linear function h, $h(0) = 41$ and $h(1) = 40$. Which equation defines h?

A. $h(x) = -x + 41$

B. $h(x) = -x$

C. $h(x) = -41x$

D. $h(x) = -41$

Hana deposited a fixed amount into her bank account each month. The function $f(t) = 100 + 25t$ gives the amount, in dollars, in Hana's bank account after t monthly deposits. What is the best interpretation of 25 in this context?

A. With each monthly deposit, the amount in Hana's bank account increased by $\$25$.

B. Before Hana made any monthly deposits, the amount in her bank account was $\$25$.

C. After 1 monthly deposit, the amount in Hana's bank account was $\$25$.

D. Hana made a total of 25 monthly deposits.

The function f is defined by $f(x) = 5x + 8$. For what value of x does $f(x) = 58$?

A. 10

B. 13

C. 50

D. 298

The function h is defined by $h(x) = x + 200$. What is the value of $h(50)$?

A. 200

B. 250

C. $10,000$

D. $50,200$

The graph of the function f is a line in the xy-plane. If the line has slope $\dfrac{3}{4}$ and $f(0) = 3$, which of the following defines f?
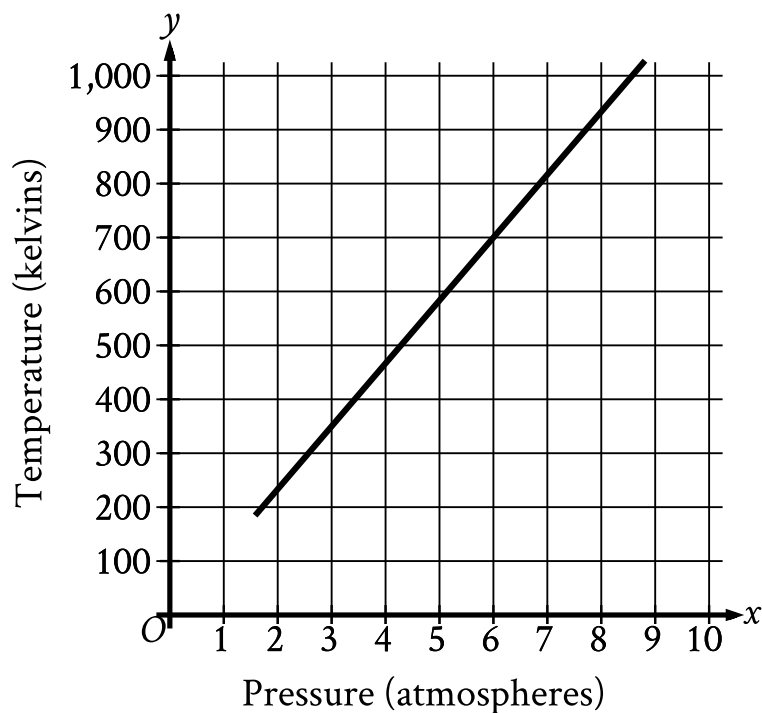
A. $f(x) = \dfrac{3}{4}x - 3$

B. $f(x) = \dfrac{3}{4}x + 3$

C. $f(x) = 4x - 3$

D. $f(x) = 4x + 3$

Oxygen gas is placed inside a tank with a constant volume. The graph shows the estimated temperature y, in kelvins, of the oxygen gas when its pressure is x atmospheres.

What is the estimated temperature, in kelvins, of the oxygen gas when its pressure is 6 atmospheres?

A. 6

B. 60

C. 700

D. 760

Robert rented a truck to transport materials he purchased from a hardware store. He was charged an initial fee of $20.00 plus an additional $0.70 per mile driven. If the truck was driven 38 miles, what was the total amount Robert was charged?

A. $46.60

B. $52.90

C. $66.90

D. $86.50

$P(t) = 250 + 10t$

The population of snow leopards in a certain area can be modeled by the function P defined above, where $P(t)$ is the population t years after 1990. Of the following, which is the best interpretation of the equation $P(30) = 550$?

A. The snow leopard population in this area is predicted to be 30 in the year 2020.

B. The snow leopard population in this area is predicted to be 30 in the year 2030.

C. The snow leopard population in this area is predicted to be 550 in the year 2020.

D. The snow leopard population in this area is predicted to be 550 in the year 2030.
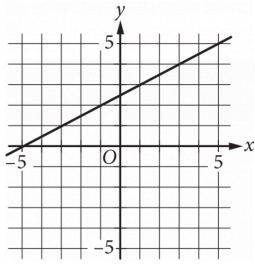
$$f(x) = 7x + 1$$

The function gives the total number of people on a company retreat with x managers. What is the total number of people on a company retreat with 7 managers?
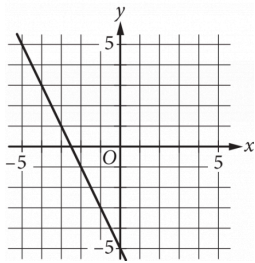
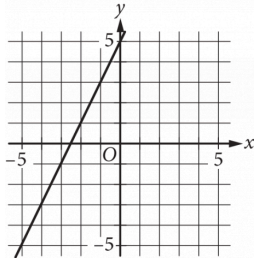Which of the following is the graph of the equation $y = 2x - 5$ in the *xy*-plane?

A.

B.

C.

D.