

Student Name:

Algebra I

Practice Test 2 Booklet



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Algebra I

DIRECTIONS

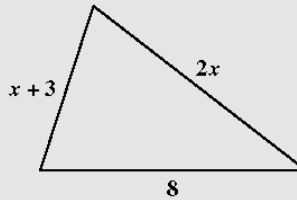
Read each problem carefully. Then work the problem and find your answer among the answer choices.

SAMPLE A

What value of x makes the equation $2x + 1 = 7$ true?

- A 2
- B 3
- C 4
- D 5

SAMPLE B



Which of these is equivalent to the perimeter of this triangle?

- F $2x^2 + 8$
- G $2x^2 + 11$
- H $3x + 8$
- J $3x + 11$

1 Which of the following expressions is equivalent to $x(x + 5) - (1 - 5x)$?

- A $-4x^2 + 6x$
- B $x^2 - 1$
- C $6x^2 + 4x$
- D $x^2 + 10x - 1$

2 In which of the following sets of points is y a function of x ?

- F $\{(1, 4), (1, 5), (2, 6), (3, 5)\}$
- G $\{(1, 4), (2, 3), (4, 4), (4, 1)\}$
- H $\{(2, 2), (3, 4), (4, 4), (5, 4)\}$
- J $\{(2, 2), (4, 6), (5, 3), (5, 1)\}$

3 In Cleo's class, g , the number of girls, is 3 times b , the number of boys. There are a total of 28 students in the class.

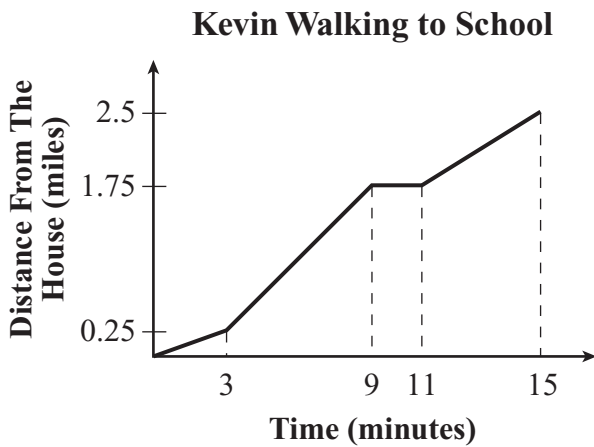
Which system of equations could be used to evaluate this situation to determine the number of boys in Cleo's class?

- A $b + g = 28$
 $b = 3g$
- B $b = 28 + g$
 $g = 3b$
- C $g = 28 + b$
 $b = 3g$
- D $b + g = 28$
 $g = 3b$

4 Which of the following binomials is NOT prime?

- F $2x + 1$
- G $3x + 2$
- H $x^2 - 4$
- J $x^2 + 8$

- 5 The graph below shows how far Kevin was from his house during the first 15 minutes of his walk to school.



During which time interval is the rate of change the greatest?

- A 0 to 3 minutes
- B 3 to 9 minutes
- C 9 to 11 minutes
- D 11 to 15 minutes

- 6 Matrices A and B are shown below.

$$A = \begin{bmatrix} -8 & 4 & 3 \\ 6 & -7 & 0 \\ 5 & -6 & 2 \end{bmatrix} \quad B = \begin{bmatrix} -2 & 4 & -9 \\ 1 & 8 & 5 \\ -3 & 4 & 7 \end{bmatrix}$$

Which of the following matrices represent $2A + B$?

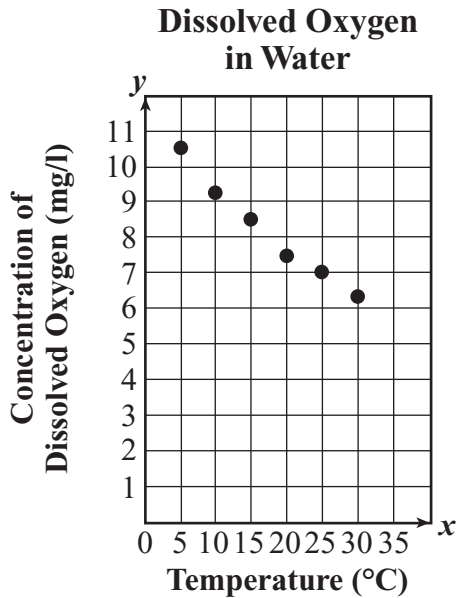
F $\begin{bmatrix} -10 & 8 & -6 \\ 7 & 1 & 5 \\ 2 & -2 & 9 \end{bmatrix}$

G $\begin{bmatrix} -18 & 12 & -15 \\ 13 & -7 & 5 \\ 13 & -8 & 11 \end{bmatrix}$

H $\begin{bmatrix} -18 & 12 & -3 \\ 13 & -6 & 5 \\ 7 & -8 & 11 \end{bmatrix}$

J $\begin{bmatrix} -20 & 16 & -12 \\ 14 & 2 & 10 \\ 4 & -4 & 18 \end{bmatrix}$

- 7 Lisa recorded the concentration, in milligrams per liter, of dissolved oxygen in saline water at different temperatures, in degrees Celsius, and made the scatter plot shown.



Which of the following statements is true about the relationship between the concentration of dissolved oxygen and the temperature of the water?

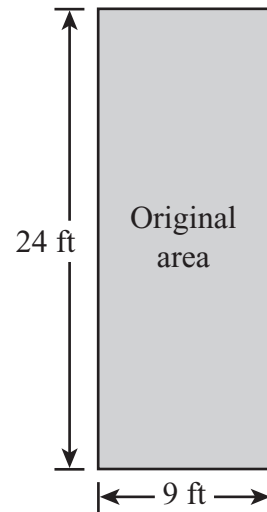
- A The concentration of dissolved oxygen in water decreases with an increase in temperature.
- B The concentration of dissolved oxygen in water increases with an increase in temperature.
- C The concentration of dissolved oxygen in water does not depend on the temperature of the water.
- D The concentration of dissolved oxygen in water decreases with a decrease in temperature.

- 8 The specifications for one of the bolts in a motor require that the diameter of the bolt, in millimeters, satisfies the inequality $|d - 1.5| \leq 0.027$.

Which of the following represents a bolt that could NOT be used in this motor?

- F 1.525 mm
- G 1.487 mm
- H 1.475 mm
- J 1.472 mm

- 9 Mr. Paulson has a rectangular fenced area that has a length of 24 feet and a width of 9 feet. He plans to create a new rectangular fenced area using the original fence materials. He is going to remove x feet from the length and add it to the width.



Which expression below is one way to represent the difference, in square feet, between the new fenced area and the original fenced area?

- A $x^2 + 14x$
- B $x^2 + 24x$
- C $-x^2 + 33x$
- D $-x^2 + 15x$

- 10 There are two student volunteers stuffing 600 envelopes for a local charity. The equation below represents t , the time in hours it will take the two students working together to complete the entire job.

$$\frac{1}{7}t + \frac{1}{3}t = 1$$

What is the value of t in this equation?

- F 2.1
- G 10
- H 10.5
- J 21

- 11 Which of the following binomials is a factor of $4x^2 - 16$?

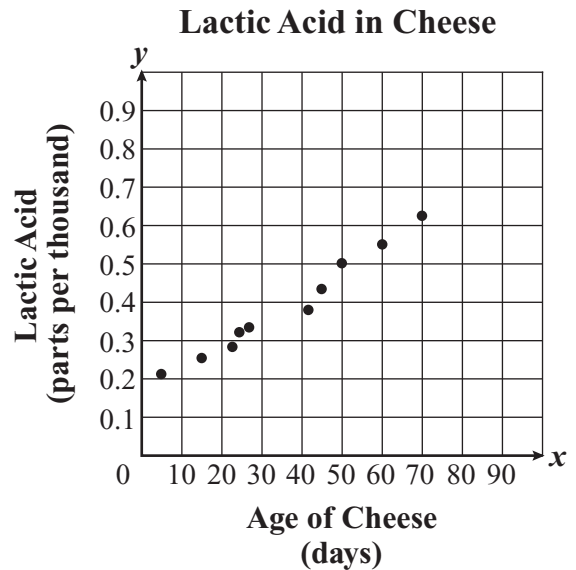
- A $x - 2$
- B $2x + 8$
- C $x^2 + 4$
- D $2x^2 - 4$

- 12 Which of the following is equivalent to

$$\frac{28x^2y^3z^7}{7x^4z^4}?$$

- F $\frac{4z^3}{x^2}$
- G $\frac{4y^3z^3}{x^2}$
- H $\frac{y^3z^{11}}{4x^6}$
- J $\frac{x^6y^3z^{11}}{4}$

- 13 The scatter plot below shows data from an experiment that tested the amount of lactic acid present in aging cheese.

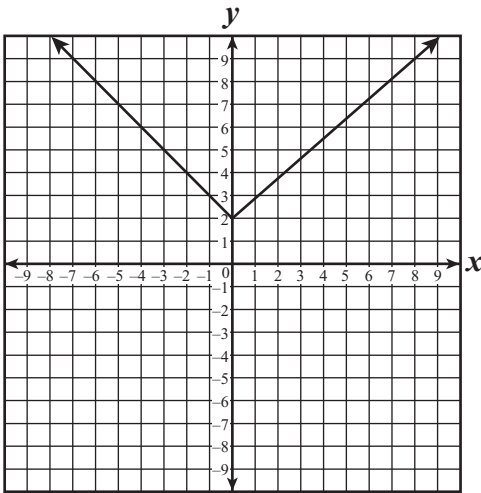


Which conclusion is best supported by the scatter plot?

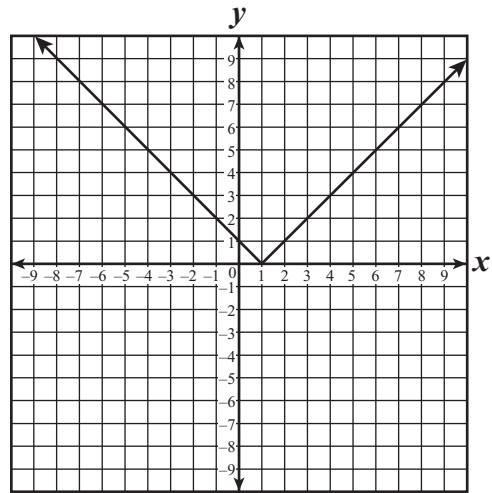
- A The longer cheese ages, the less lactic acid present.
- B The longer cheese ages, the more lactic acid present.
- C The amount of lactic acid present remains constant as cheese ages.
- D No relationship exists between the time cheese ages and the amount of lactic acid present.

14 Which of the following best represents the graph of $y = |x - 1| + 2$?

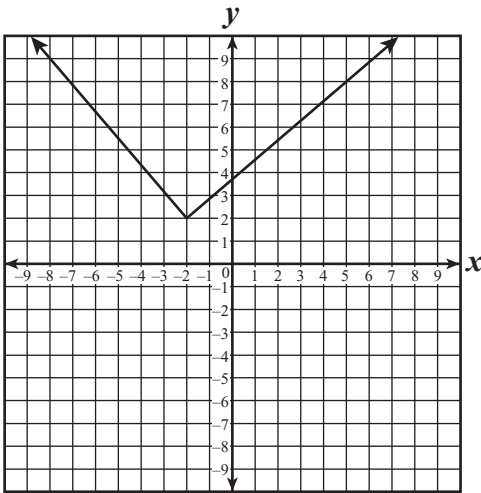
F



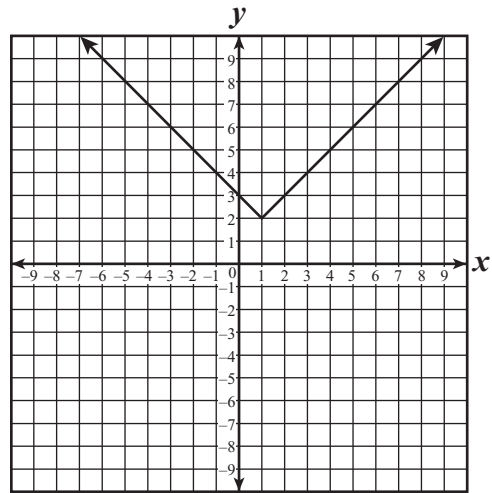
H



G



J



15 For which function will the value of y always be triple the value of x ?

A $y = 3x + 3$

B $y = (x + 3)^3$

C $y = 3x$

D $y = x^3$

16 Shelly drew a line segment connecting point $G(18, 6)$ and point $H(7, 12)$ on a coordinate grid.

Which is closest to the length of \overline{GH} ?

F 9 units

G 13 units

H 17 units

J 31 units

17 At 11:05 a.m. a man in a parachute is 8000 feet above the ground. At 11:08 a.m. the same man is 5400 feet above the ground.

What is the average rate of change, in feet per minute, between 11:05 a.m. and 11:08 a.m.?

A $-\frac{3}{2600}$

B $\frac{3}{2600}$

C $-\frac{2600}{3}$

D $\frac{2600}{3}$

- 18 Matrix W shows the hourly wage of the analyst positions and the number of years an analyst has worked for an insurance company. The company has decided to give all analyst positions a 10% raise in their hourly wage.

$$W = \begin{matrix} & \begin{matrix} 0-2 \text{ yrs} & 3-5 \text{ yrs} & 5+ \text{ yrs} \end{matrix} \\ \begin{matrix} \text{Analyst Level 1} \\ \text{Analyst Level 2} \\ \text{Analyst Level 3} \end{matrix} & \begin{bmatrix} 7.50 & 9.00 & 12.40 \\ 9.20 & 12.50 & 14.70 \\ 16.40 & 18.50 & 21.50 \end{bmatrix} \end{matrix}$$

Which matrix shows $0.10W + W$, the new hourly wages of the analyst positions?

F

$$\begin{matrix} & \begin{matrix} 0-2 \text{ yrs} & 3-5 \text{ yrs} & 5+ \text{ yrs} \end{matrix} \\ \begin{matrix} \text{Analyst Level 1} \\ \text{Analyst Level 2} \\ \text{Analyst Level 3} \end{matrix} & \begin{bmatrix} 0.75 & 0.90 & 1.24 \\ 0.92 & 1.25 & 1.47 \\ 1.64 & 1.85 & 2.15 \end{bmatrix} \end{matrix}$$

H

$$\begin{matrix} & \begin{matrix} 0-2 \text{ yrs} & 3-5 \text{ yrs} & 5+ \text{ yrs} \end{matrix} \\ \begin{matrix} \text{Analyst Level 1} \\ \text{Analyst Level 2} \\ \text{Analyst Level 3} \end{matrix} & \begin{bmatrix} 8.25 & 9.90 & 13.64 \\ 10.12 & 13.75 & 15.17 \\ 18.04 & 20.35 & 23.75 \end{bmatrix} \end{matrix}$$

G

$$\begin{matrix} & \begin{matrix} 0-2 \text{ yrs} & 3-5 \text{ yrs} & 5+ \text{ yrs} \end{matrix} \\ \begin{matrix} \text{Analyst Level 1} \\ \text{Analyst Level 2} \\ \text{Analyst Level 3} \end{matrix} & \begin{bmatrix} 8.25 & 9.90 & 13.64 \\ 10.12 & 13.75 & 16.17 \\ 18.04 & 20.35 & 23.65 \end{bmatrix} \end{matrix}$$

J

$$\begin{matrix} & \begin{matrix} 0-2 \text{ yrs} & 3-5 \text{ yrs} & 5+ \text{ yrs} \end{matrix} \\ \begin{matrix} \text{Analyst Level 1} \\ \text{Analyst Level 2} \\ \text{Analyst Level 3} \end{matrix} & \begin{bmatrix} 7.60 & 9.10 & 12.50 \\ 9.30 & 12.60 & 14.80 \\ 16.50 & 18.60 & 21.60 \end{bmatrix} \end{matrix}$$

- 19 The table below shows the average daily temperature, in degrees Fahrenheit, for select days in April for Townsville.

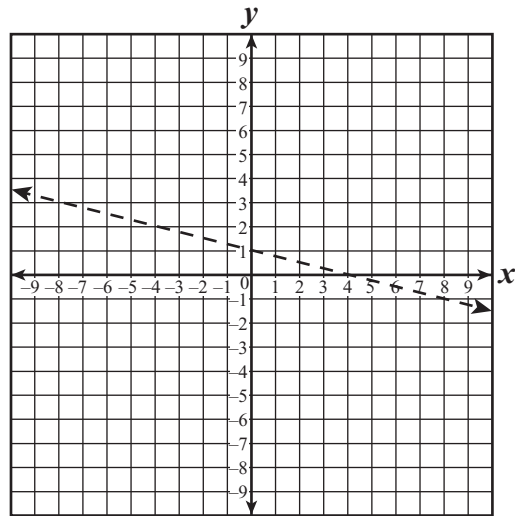
Townsville's Average Daily Temperature

Day (x)	Temperature (y)
1	72
5	73
10	74
12	75
20	76
25	78
30	79

Which of the following is closest to the line-of-best fit for the data?

- A $y = \frac{1}{5}x + 68$
- B $y = \frac{1}{4}x + 72$
- C $y = \frac{13}{3}x + 72$
- D $y = 4x + 68$

- 20 Nathan correctly graphed the line of the inequality $x + 4y > 4$ on a coordinate grid, as shown, but did not shade the solution set.



Which of the following points would appear in the solution set of this inequality?

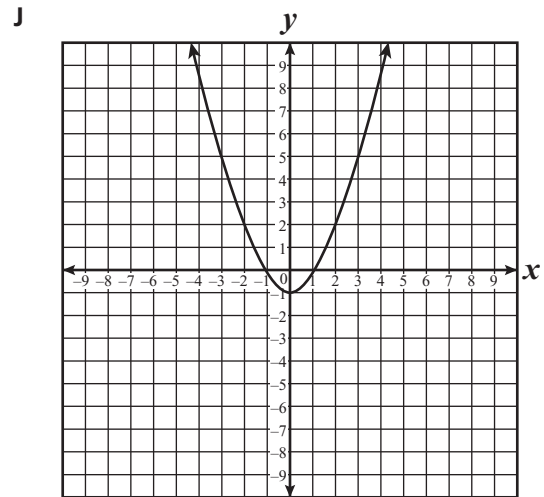
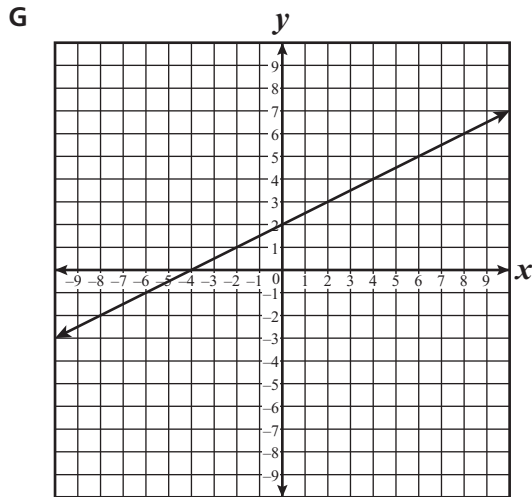
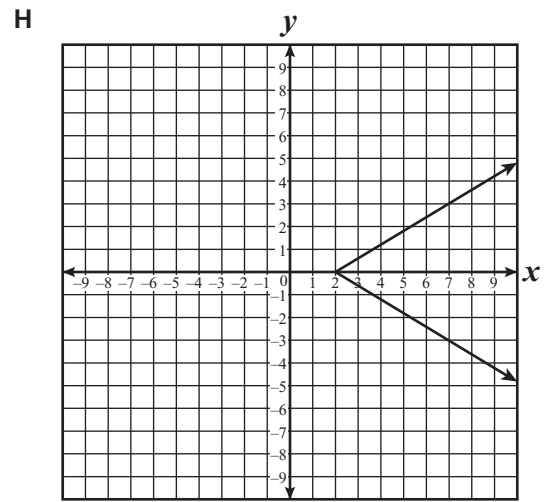
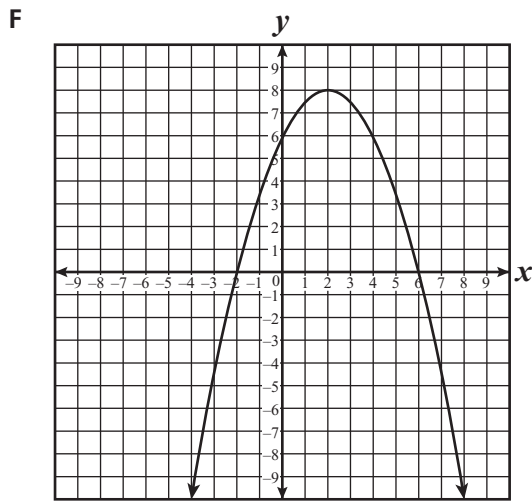
- F $(8, -1)$
- G $(-5, -4)$
- H $(-1, -8)$
- J $(-5, 4)$

- 21 The courtyard at the city hall building is shaped like a square. The area of the courtyard can be represented by $(9x^2 - 24x + 16)$ square feet.

Which expression represents the length, in feet, of one side of the courtyard?

- A $3x - 4$
- B $3x + 4$
- C $3x + 8$
- D $3x - 8$

22 Which of the following graphs does NOT represent a function of x ?



- 23 The coach keeps track of the number of shirts by size of the swim team and the tennis team. The following matrices represent the number of shirts by size of the swim team and the total number of shirts by size of both the swim and tennis teams.

Shirt Sizes for Swim Team			Shirt Sizes for Both Teams		
	Boys	Girls		Boys	Girls
Small	4	8	Small	7	15
Medium	3	12	Medium	12	23
Large	10	3	Large	21	8

Which of the following matrices represents the number of shirts by size of the tennis team?

A

Shirt Sizes for Tennis Team		
	Boys	Girls
Small	3	7
Medium	9	11
Large	11	5

C

Shirt Sizes for Tennis Team		
	Boys	Girls
Small	3	9
Medium	10	11
Large	11	6

B

Shirt Sizes for Tennis Team		
	Boys	Girls
Small	11	30
Medium	15	35
Large	31	11

D

Shirt Sizes for Tennis Team		
	Boys	Girls
Small	12	30
Medium	15	25
Large	30	11

24 Which statement best describes the graph of the linear equation $2x + 2y = 2$?

- F The graph has a slope of 1 and a y-intercept of 2.
- G The graph has a slope of 1 and a y-intercept of 1.
- H The graph has a slope of -1 and a y-intercept of 2.
- J The graph has a slope of -1 and a y-intercept of 1.

25 An equation and the first step in its solution are shown below.

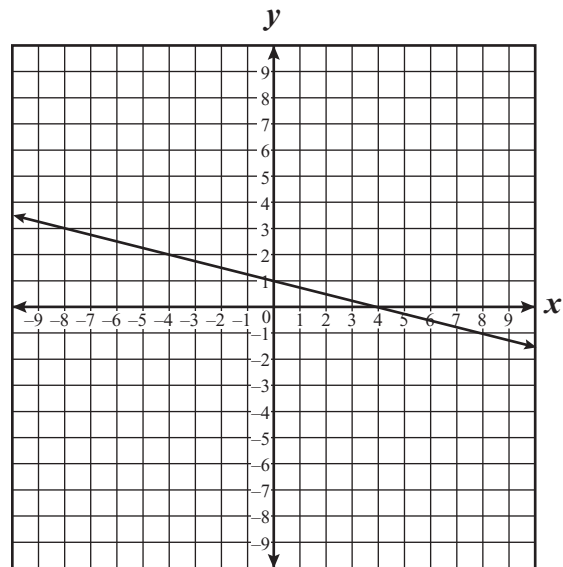
$$x^2 + 3x - 9 = 0$$

Step 1: $x^2 + 3x + h = 9 + h$

What value of h should be used to solve the equation by the method of completing the square?

- A $\frac{9}{2}$
- B $\frac{3}{2}$
- C $\left(\frac{3}{2}\right)^2$
- D $\left(\frac{9}{2}\right)^2$

26 A linear function is graphed on the grid below.



Which equation best represents a line that is perpendicular to the graph?

- F $y = \frac{1}{4}x + 4$
- G $y = -\frac{1}{4}x - 1$
- H $y = 4x + 4$
- J $y = -4x - 1$

- 27 Kelly recorded the following data while observing the temperature, in degrees Fahrenheit, of a chemical liquid cooling in her science class.

Cooling Temperature of Chemical

Time (minutes)	Temperature (°F)
4	89.50
10	78.25
16	67.00
20	59.50

What is the rate of change for the temperature of this liquid?

- A -1.875 degrees per minute
- B -0.938 degrees per minute
- C 0.533 degrees per minute
- D 1.875 degrees per minute

- 28 Eli used the steps shown below to solve the given equation. His teacher said his solution was incorrect.

Given: $\frac{1}{4}(32x - 16) = 6x$

Step 1: $\frac{1}{4} \bullet 32x - 16 = 6x$

Step 2: $8x - 16 = 6x$

Step 3: $8x - 16 + 16 = 6x + 16$

Step 4: $8x = 6x + 16$

Step 5: $8x - 6x = 6x + 16 - 6x$

Step 6: $2x = 16$

Step 7: $x = 8$

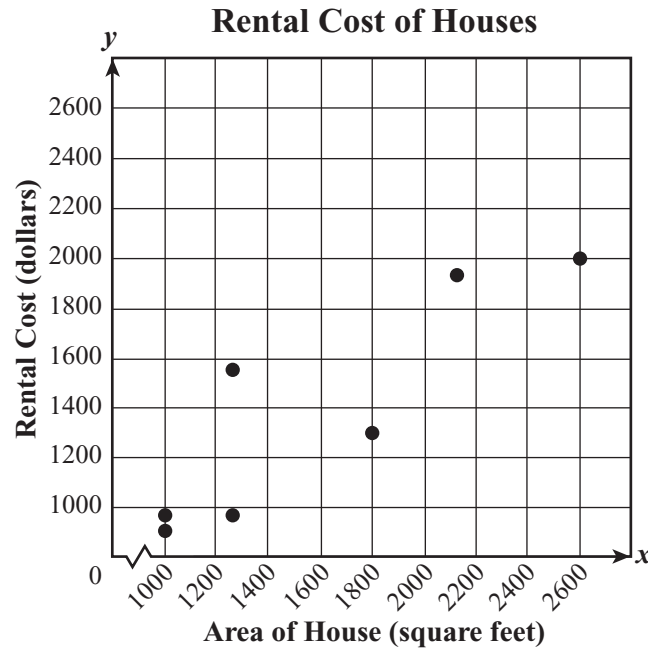
In which step did the first error appear?

- F Step 1
- G Step 3
- H Step 5
- J Step 7

- 29 Which expression is equivalent to $-3(2x + 5) - (x - 3)$?

- A $-7x + 2$
- B $-7x + 12$
- C $-7x - 12$
- D $-7x - 18$

- 30 Emma recorded the square footage of several rental houses in one neighborhood and the rental cost of each house. She made the following scatter plot with the data she collected.



Emma concluded that her graph proves that the cost for a rental house decreases as the square footage of the house decreases.

Which statement could be used to justify Emma's conclusion?

- F The data points form a straight line.
- G The data points are all in the first quadrant.
- H The data points would be above a line-of-best fit.
- J A line-of-best fit would show a positive correlation.

- 31 Which of the following quadratic equations has -5 as one of its solutions?

- A $x^2 - 4x - 5 = 0$
- B $x^2 + 3x - 10 = 0$
- C $x^2 - 2x - 15 = 0$
- D $x^2 - 6x + 5 = 0$

- 32 The diameter of a circular pond is 0.8 kilometers.

Which is closest to the area of the surface of the pond?

- F 0.5 km^2
- G 1.0 km^2
- H 2.0 km^2
- J 2.5 km^2

- 33 Which statement best describes the relationship between the graphs of the two linear equations below?

$$y = \frac{3}{2}x + 4$$

$$3x - 2y = -8$$

- A The lines are the same.
 B The lines are parallel.
 C The lines intersect and are perpendicular.
 D The lines intersect but are not perpendicular.

- 34 Which equation best represents the line-of-best fit for the data shown in the table below?

x	y
3	1
4	5
5	9
7	12
8	15
10	25

- F $y = 2x - 3$
 G $y = 3x - 8$
 H $y = 4x - 11$
 J $y = 5x - 25$

- 35 Which expression is equivalent to $(2x^2)(3x^4)^2$?

- A $6x^8$
 B $6x^{10}$
 C $18x^8$
 D $18x^{10}$

- 36 Andrew plans to buy 3 T-shirts and 3 sweaters. The price in dollars, including tax, of each T-shirt and sweater is shown in matrix C . The store is offering a 15% discount on all the items.

$$C = \begin{matrix} & \text{T-shirts} & \text{Sweaters} \\ \begin{bmatrix} 15 & 20 \\ 12 & 22 \\ 15 & 25 \end{bmatrix} \end{matrix}$$

Andrew determined the sale price of each item as shown in the matrix below.

$$\begin{matrix} & \text{T-shirts} & \text{Sweaters} \\ \begin{bmatrix} 12.75 & 17.00 \\ 10.20 & 18.70 \\ 12.75 & 21.25 \end{bmatrix} \end{matrix}$$

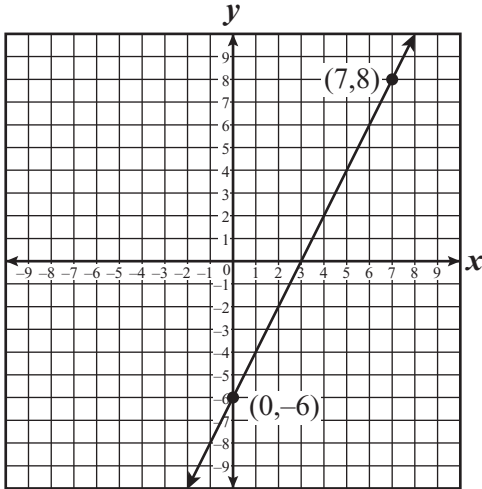
Which operation justifies the sale price of each item he plans to buy?

- F $C + 0.15C$
 G $0.15C$
 H $C - 0.15C$
 J $0.15 + C$

- 37 Which of the following expressions is equivalent to $(x - y)^2$?

- A $x^2 + 2xy - y^2$
 B $x^2 + 2xy + y^2$
 C $x^2 - 2xy + y^2$
 D $x^2 - 2xy - y^2$

- 38 The graph of a linear function is shown on the grid below.



What is the equation for the line on the grid?

- F $y = \frac{1}{2}x - 6$
- G $y = \frac{1}{2}x + 3$
- H $y = 2x + 3$
- J $y = 2x - 6$
-
- 39 The skating surface of a city's rectangular ice skating rink is 85 feet by 200 feet.
- Which is closest to the diagonal length of the ice skating rink?
- A 217 feet
- B 285 feet
- C 434 feet
- D 570 feet

- 40 On a coordinate plane, line l_1 and l_2 are parallel.

Which statement about l_1 and l_2 MUST be true?

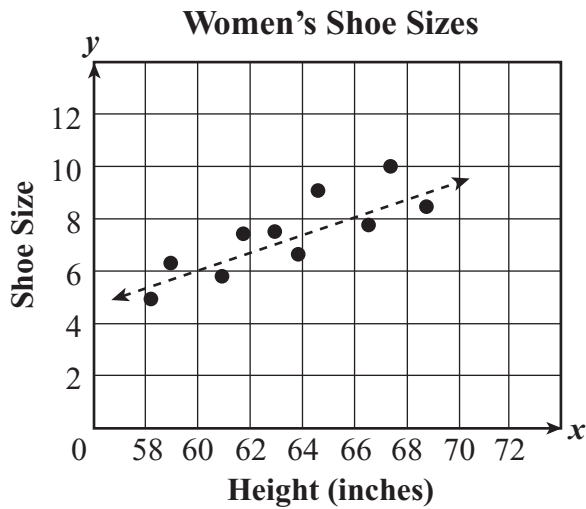
- F Both lines have the same x -intercept.
- G Both lines have the same y -intercept.
- H Both lines have the same equation.
- J Both lines have the same slope.
-
- 41 A kangaroo in a single hop can reach a maximum height of 9 feet. The equation below can be used to determine h , the height in feet of the kangaroo's leap from the ground after t seconds.

$$h = -16t^2 + 24t$$

How many seconds would it take for the kangaroo to reach its maximum height from the ground?

- A 0.25 second
- B 0.75 second
- C 1.50 seconds
- D 1.75 seconds

- 42 The following scatter plot and the line-of-best fit shows the relationship between a woman's height and her shoe size.



Based on the linear model, which is the best prediction of the shoe size of a woman who is 72 inches tall?

- F 11
- G 10.5
- H 10
- J 9.5

- 43 Matrices M and N are shown below.

$$M = \begin{bmatrix} 4 & -6 \\ 3 & 4 \end{bmatrix} \quad N = \begin{bmatrix} -8 & 12 \\ 7 & -5 \end{bmatrix}$$

Which of the following represent $4M - N$?

- A $\begin{bmatrix} 8 & -14 \\ 19 & 11 \end{bmatrix}$
- B $\begin{bmatrix} 48 & -72 \\ -16 & 36 \end{bmatrix}$
- C $\begin{bmatrix} 24 & -36 \\ 5 & 21 \end{bmatrix}$
- D $\begin{bmatrix} -16 & 24 \\ 40 & -4 \end{bmatrix}$

- 44 Which of the following is the solution for $|3x - 3| - 9 > 27$?

- F $x < -5$ or $x > 7$
- G $x < -5$ or $x > 13$
- H $x < -8$ or $x > 10$
- J $x < -11$ or $x > 13$

- 45 Jeremy plans to construct a storage building that will have a square-shaped floor. In his plans, each side is represented by the expression $(4x + 4)$ feet.

If the plans show that the perimeter of the floor of the building is 64 feet, what is the value of x ?

- A 3
- B 7
- C 15
- D 16

- 46 The table shows the number of times different documents were reviewed and the total number of errors that were found on each document.

Document Review

Number of Reviews (x)	Number of Errors (y)
5	2
4	2
2	6
2	8
1	8
4	4
3	4
3	6

Which equation best represents the line-of-best fit for the data in the table?

- F $y = -\frac{5}{3}x + 10$
- G $y = -2x + 12$
- H $y = -\frac{3}{2}x + 8$
- J $y = -3x + 14$

- 47 What is the factored form of $x^2 - 5x + 6$?

- A $(x + 6)(x - 1)$
- B $(x + 2)(x - 3)$
- C $(x + 1)(x - 6)$
- D $(x - 2)(x - 3)$

- 48 What is the solution set of the equation $4x^2 + 13x = -9$?

- F $\left\{-\frac{9}{4}, -1\right\}$
- G $\{-9, -4\}$
- H $\left\{\frac{-13 - \sqrt{313}}{2}, \frac{-13 + \sqrt{313}}{2}\right\}$
- J $\left\{\frac{-13 - \sqrt{313}}{8}, \frac{-13 + \sqrt{313}}{8}\right\}$

- 49 The volume of a sphere can be determined by the formula $V = \frac{4}{3}\pi r^3$.

Which of the following describes the volume of a sphere when its radius is tripled?

- A The volume will be 3 times as large as the original volume.
- B The volume will be 6 times as large as the original volume.
- C The volume will be 9 times as large as the original volume.
- D The volume will be 27 times as large as the original volume.

- 50 An automobile dealership used matrices to represent the inventory of sport-utility vehicles (SUVs) and cars on its lot before and after a delivery of new automobiles.

Automobile Inventory Before Delivery			Automobile Inventory After Delivery		
	SUVs	Cars		SUVs	Cars
Compact	15	18	Compact	20	25
Full-Size	21	29	Full-Size	30	45
Luxury	12	2	Luxury	15	3

Which matrix represents the number of SUVs and cars that were delivered to the automobile dealership?

F

	SUVs	Cars
Compact	33	45
Full-Size	50	75
Luxury	14	18

G

	SUVs	Cars
Compact	5	7
Full-Size	9	16
Luxury	3	1

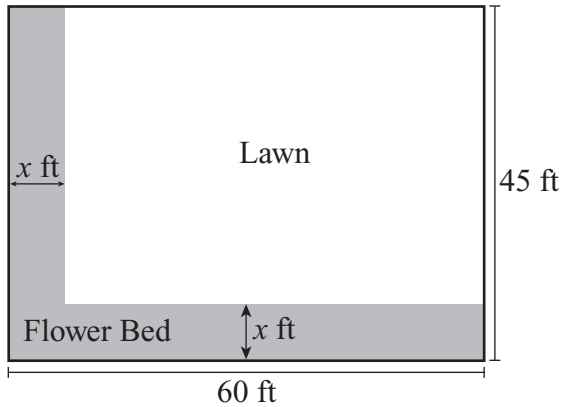
H

	SUVs	Cars
Compact	5	43
Full-Size	9	74
Luxury	3	5

J

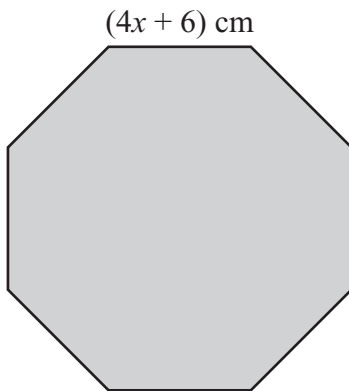
	SUVs	Cars
Compact	35	43
Full-Size	51	74
Luxury	27	5

- 51 Monica's rectangular lawn has a length of 60 feet and a width of 45 feet. She made a flower bed along two sides of the lawn, as shown in the diagram.



Which of the following expressions can be used to find the area, in square feet, of the flower bed?

- A $210 + 21x$
 B $210 + 4x^2$
 C $60x + 45x$
 D $105x - x^2$
- 52 Wanda drew a regular octagon that has side lengths of $(4x + 6)$ centimeters, as shown below.



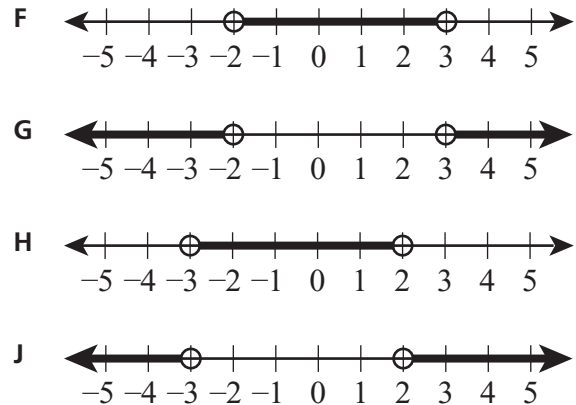
What is the perimeter, in centimeters, of the octagon Wanda drew?

- F $32x + 48$
 G $32x + 6$
 H $28x + 52$
 J $24x + 36$

- 53 What is the solution to the equation $6(x - 5) - 4x = 3(4x - 5)$?

- A 0
 B $-\frac{3}{2}$
 C $-\frac{5}{2}$
 D $-\frac{15}{2}$

- 54 Which graph best represents the solution set for $|4x - 2| < 10$?

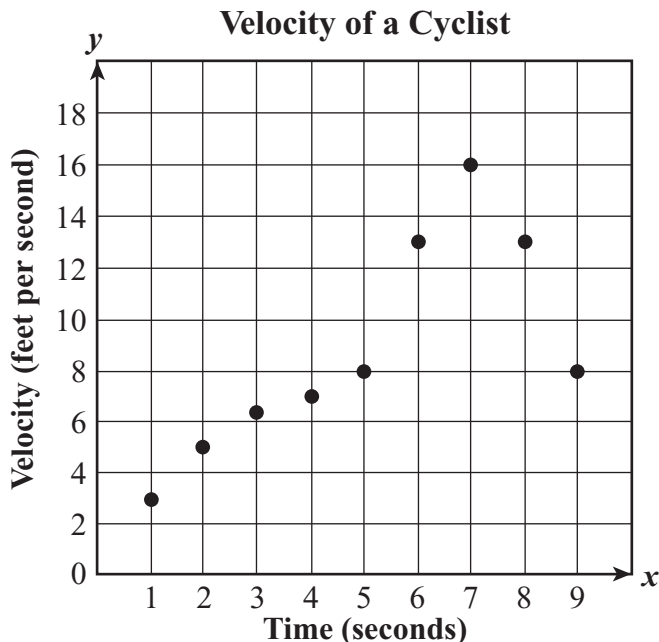


- 55 The total charge in dollars for a car rental can be determined by using the function $c = 0.4x + 35$, where c represents the total cost of the rental and x represents the total distance traveled in miles.

Which statement justifies that the total cost for renting this car and driving a distance of 100 miles is \$75.00?

- A The total cost increases \$0.40 for every 35 miles traveled.
- B The total cost increases \$35.00 for every 40 miles traveled.
- C There is an initial charge of \$35.00 for every mile traveled.
- D The cost increases \$0.40 for every mile traveled after an initial charge of \$35.00.

- 56 The data below shows the velocity of a cyclist during a 10-second time period.



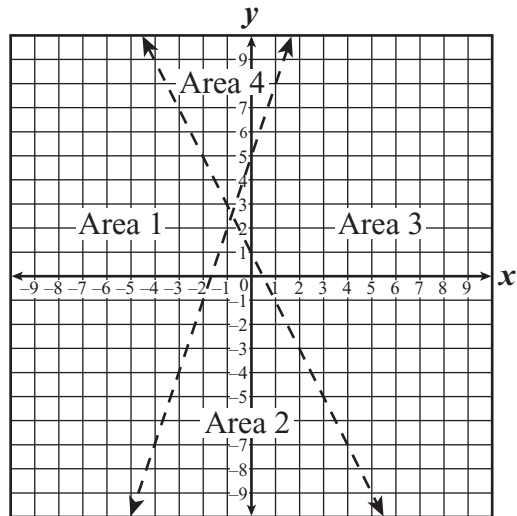
Based on the scatter plot, which of the following describes the time when the velocity of the cyclist was greater than 11 feet per second?

- F Between 5 and 7 seconds
- G Between 5.5 and 8.5 seconds
- H Between 6.5 and 7.5 seconds
- J Between 7 and 9 seconds

- 57 The graph for the system of inequalities without the shading of its solution set is shown on the coordinate grid.

$$2x + y < 1$$

$$3x - y < -5$$



Which area should be shaded to represent the solution set of this system of inequalities?

- A Area 1
- B Area 2
- C Area 3
- D Area 4

- 58 What is the solution set for the equation

$$2c^2 + 5c = -3?$$

F $\left\{-1, \frac{3}{2}\right\}$

G $\left\{-\frac{3}{2}, -1\right\}$

H $\{-3, 2\}$

J $\{-3, -2\}$

- 59 Susie graphed the equation of a line that passes through point $(-6, -2)$ and is parallel to the graph of $y = -\frac{5}{6}x + 3$.

Which of the following represents the equation of the line that Susie graphed?

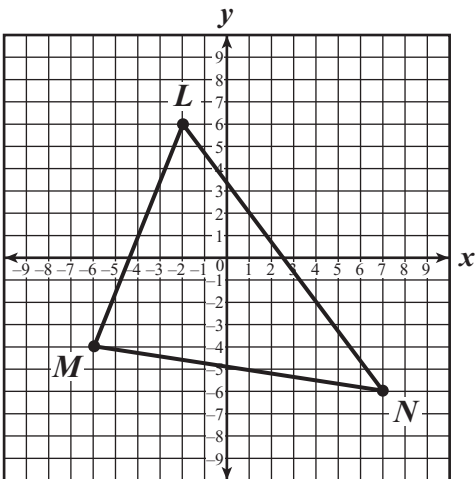
- A $y = -\frac{5}{6}x - 7$
B $y = \frac{6}{5}x - \frac{46}{5}$
C $y = \frac{6}{5}x + \frac{26}{5}$
D $y = -\frac{5}{6}x + 4$

- 61 Henry drew two circles. The first circle he drew has a radius of 6 centimeters and an area of 36π square centimeters.

If the radius of the second circle is half that of his first circle, which of the following describes the area of the second circle?

- A The area of the second circle is 2 times the area of his first circle.
B The area of the second circle is 4 times the area of his first circle.
C The area of the second circle is $\frac{1}{2}$ the area of his first circle.
D The area of the second circle is $\frac{1}{4}$ the area of his first circle.

- 60 Triangle LMN has vertices $L(-2, 6)$, $M(-6, -4)$, and $N(7, -6)$ as shown below.



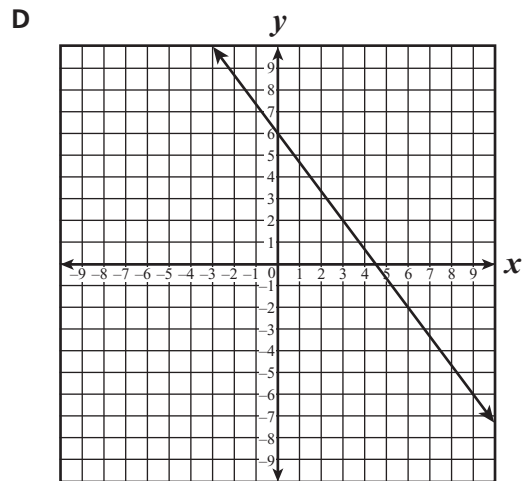
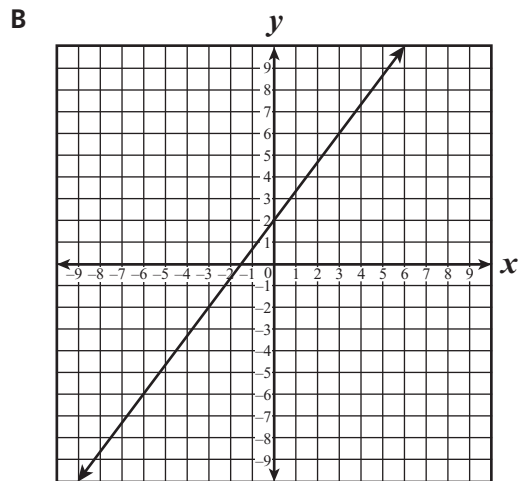
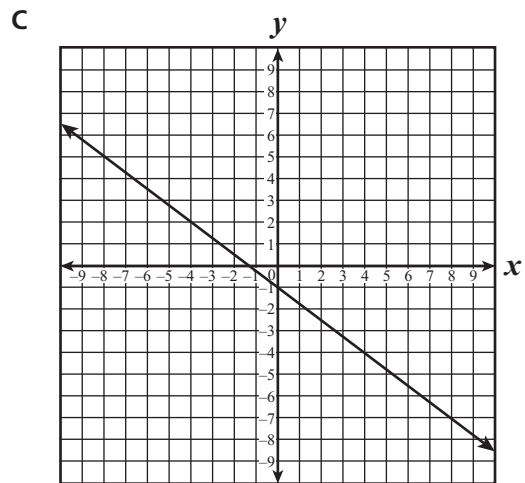
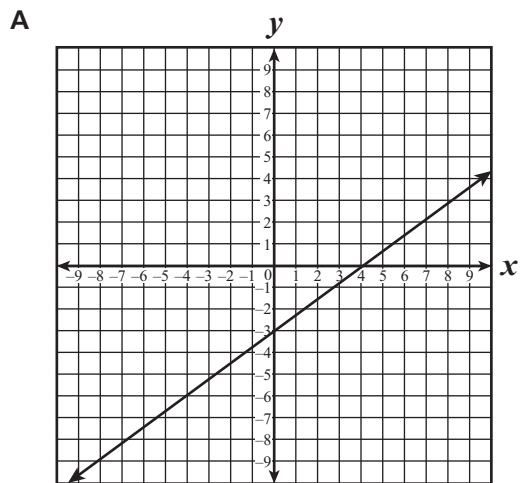
Which of the following is a true statement?

- F The slope of \overline{MN} is $\frac{5}{2}$.
G The slope of \overline{LN} is $-\frac{3}{4}$.
H The midpoint of \overline{MN} is $(-\frac{1}{2}, 5)$.
J The midpoint of \overline{LN} is $(2\frac{1}{2}, 0)$.

- 62 Which of the following trinomials is prime over the set of rational numbers?

- F $x^2 - 9x + 18$
G $x^2 - 10x + 16$
H $x^2 - 8x + 14$
J $x^2 - 12x + 11$

63 Which graph best represents the line that is parallel to the line defined by $y = \frac{3}{4}x + 2$?



64 If $x = 6$, which inequality has the solution $y \geq 12$?

F $y \geq \frac{4}{3}x + 4$

G $y \geq \frac{3}{4}x + 3$

H $y \leq -\frac{2}{3}x + 8$

J $y \leq -\frac{3}{2}x + 6$

65 The table shows the relationship between x , the number of employees hired for a construction project, and y , the cost of the project.

Construction Project

Number of Employees	Cost of Project (dollars)
32	6000
25	5200
28	8000
35	10,000
20	8400
22	5400
45	14,250

Which equation is closest to the line-of-best fit for this data?

A $y = 290x - 500$

B $y = 295x - 520$

C $y = 600x + 7000$

D $y = 600x + 5200$

End of Test

