1 The area of a square garden is measured and found to be 18.088 square feet. Which is the accurate number for the side of the garden in feet?

Area of a square: $A = s^2$

A. 4.2525

B. 4.253

C. 4.25

D. 4.3

2 Which is the better buy: 1 gallon of paint for \$33.00 or 2 quarts of paint for \$32.50? By how much? (1 gallon = 4 quarts)

A. 2 quarts: \$0.50/quart less

B. 2 quarts of paint: \$8.00/quart less

C. 1 gallon of paint: \$0.50/quart less

D. 1 gallon of paint: \$8.00/quart less

3 Kyle has $12a + 5d$ boxes to deliver. Maeve has $4a + 2d$ boxes to deliver. How many more boxes does Kyle have than Maeve?

A. $16a + 7d$

B. $16a + 3d$

C. $12a + 7d$

D. $8a + 3d$

4 Use the formula $D = rt$ to determine the distance a car traveled when $r = 65$ mi/hr and $t = 2.5$ hr.

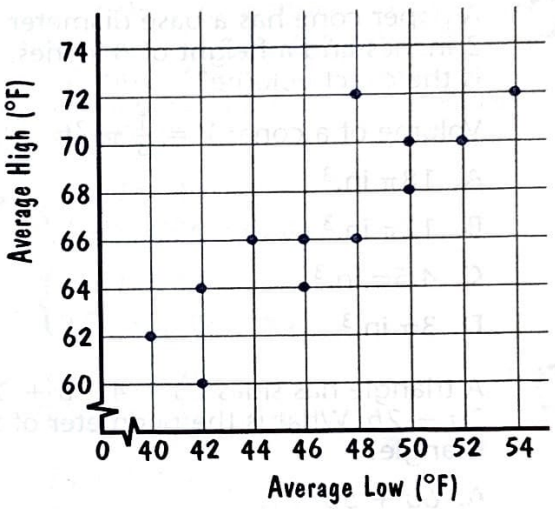
A. 26 mi

B. 26 mi/hr

C. 162.5 mi

D. 162.5 mi/hr

5 What is the average high temperature when the low temperature is 52° F?



A. 65° F

B. 68° F

C. 70° F

D. 71° F

6 What is the difference between a line and a ray?

A. A line is one-dimensional, and a ray is nondimensional.

B. A line is a position, and a ray is a distance.

C. A line has no endpoints, and a ray has two endpoints.

D. A line extends infinitely in both directions, and a ray extends in only one direction.

7 Which expression has three terms and a coefficient of 6?

A. $6x^2 + 12 - 3$

B. $-6(x^2 + 9)$

C. $6x^2 + 9$

D. $6x^2(9)$

8 Simplify $(5x^2)^3$.

A. $5x^5$

B. $5x^6$

C. $125x^5$

D. $125x^6$

9 A paper cone has a base diameter of 3 inches and a height of 6 inches. What is the exact volume?

Volume of a cone: $V = \frac{1}{3}\pi r^2 h$

A. 18π in.^{3}

B. 12π in.^{3}

C. 4.5π in.^{3}

D. 3π in.^{3}

10 A triangle has sides $2a + 4b$, $a + 3b$, and $3a - 2b$. What is the perimeter of the triangle?

A. $6a + 5b$

B. $6a + 14b$

C. $11ab$

D. $9ab$

11 Simplify $2(6 + 3^2 - 10)$.

A. 10

B. 12

C. 14

D. 20

12 The area of a rectangle is $16x^2 - 36$ square units. What are the side lengths of the rectangle in units?

Area of a rectangle: $A = l \times w$

A. $(4x - 6)$ and $(4x - 6)$ units

B. $(4x + 6)$ and $(4x - 6)$ units

C. $(8x - 18)$ and $(8x - 18)$ units

D. $(8x + 18)$ and $(8x - 18)$ units

13 Which table is represented by the equation $y = 3x$?

A.

x	1	2	3
y	$\frac{1}{3}$	$\frac{2}{3}$	1

B.

x	1	2	3
y	3	6	9

C.

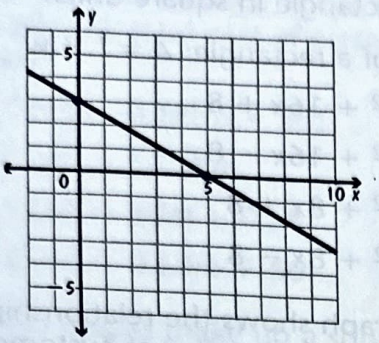
x	0	6	9
y	0	2	3

D.

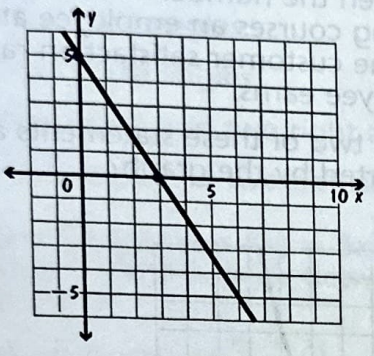
x	1	4	12
y	2	12	3

14 Which graph represents the solution set to the equation $3x - 5y = 15$?

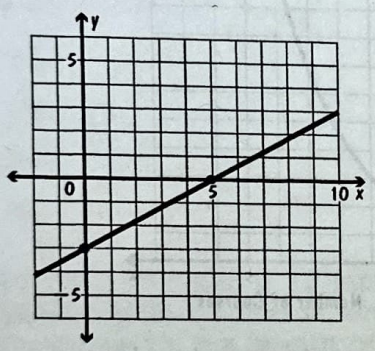
A.



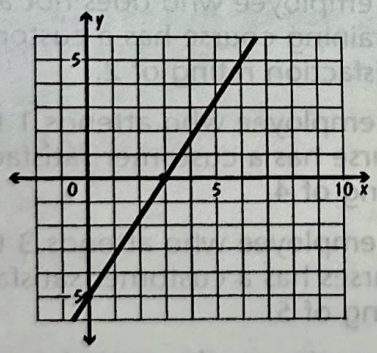
B.



C.



D.



15 Nikki has two part-time jobs. She earns \$15 per hour at a flower shop and \$20 per hour at a tutoring center. She can work a maximum of 40 hours per week and would like to earn at least \$650 this week.

If f represents the number of hours she works at the flower shop and t represents the number of hours she works at the tutoring center, which system of inequalities could be used to represent this situation?

A. $\begin{cases} f + t \leq 40 \\ 15f + 20t \geq 650 \end{cases}$

B. $\begin{cases} f + t > 40 \\ 15f + 20t < 650 \end{cases}$

C. $\begin{cases} f + t \geq 40 \\ 15f + 20t \leq 650 \end{cases}$

D. $\begin{cases} f + t \leq 40 \\ 20f + 15t \geq 650 \end{cases}$

16 Solve $4r + 11 > -3r - 10$.

A. $r < -21$

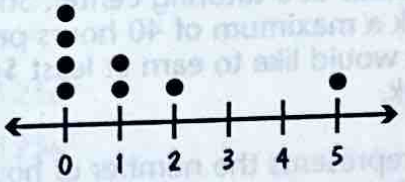
B. $r > -3$

C. $r > 3$

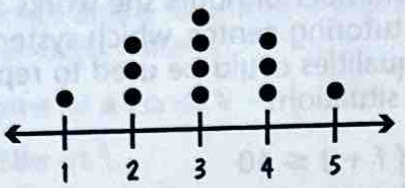
D. $r < 21$

17 Which two of these have symmetric distributions?

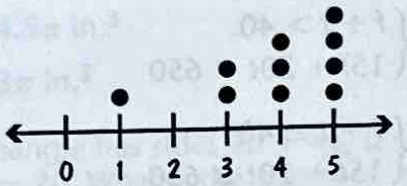
A.



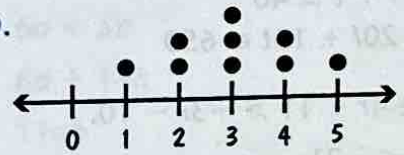
B.



C.



D.



18 What is the solution to the system of equations?

$$\begin{cases} 2x + 6y = 30 \\ -2x - 4y = -16 \end{cases}$$

A. $(6, -7)$

B. $(6, 7)$

C. $(-6, 7)$

D. $(-6, -7)$

19 Simplify $\sqrt{144x^6}$.

A. $12x$

B. $12x^2$

C. $12x^3$

D. $12x^6$

20 The length of a rectangle is $(2x + 4)$ and the width is $(3x - 2)$. What is the area of the rectangle in square units?

Area of a rectangle: $A = l \times w$

A. $6x^2 + 16x + 8$

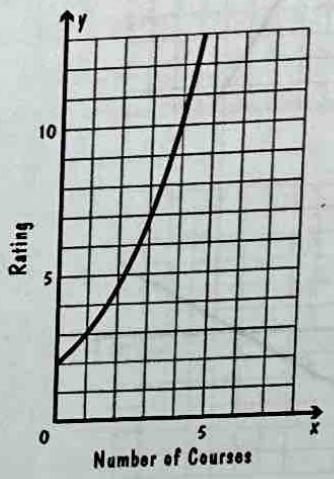
B. $6x^2 + 16x - 8$

C. $6x^2 + 8x + 8$

D. $6x^2 + 8x - 8$

21 The graph shows the relationship between the number of customer service training courses an employee attends and the customer satisfaction rating the employee earns.

Which two of these statements are supported by the graph?



A. An employee who does not attend a training course has a customer satisfaction rating of 2.

B. An employee who attends 1 training course has a customer satisfaction rating of 4.

C. An employee who attends 3 training courses has a customer satisfaction rating of 5.

D. An employee who attends 4 training courses has a customer satisfaction rating of 10.

22 The cost of joining a carpool is a maintenance fee of $50, plus $0.58 per mile. What is a function rule $C(m)$ that models the total cost of carpooling m miles?

A. $C(m) = 0.58(m + 50)$

B. $C(m) = 50.58m$

C. $C(m) = 50m + 0.58$

D. $C(m) = 0.58m + 50$

23 Which angles make up a square?

A. four right angles

B. four acute angles

C. two acute and two right angles

D. two acute and two obtuse angles

24 Given the function $f(x) = 5x^2$, what is the average rate of change between $x = 1$ and $x = 3$?

$$\text{Rate of change} = \frac{y_2 - y_1}{x_2 - x_1}$$

A. 15

B. 20

C. 25

D. 30

25 Suppose a tree that is 12 feet tall casts a shadow that is 5 feet in length. Which best represents the length of the shadow cast by an 18 feet tall tree, at the exact same time of day?

A. 7 ft

B. 7.5 ft

C. 5 ft

D. 3.3 ft

26 What is the slope, x-intercept, and y-intercept of the linear function $y = -\frac{2}{3}x + 6$?

A. slope $= \frac{2}{3}$; x-intercept $= 9$; y-intercept $= 6$

B. slope $= -\frac{2}{3}$; x-intercept $= 9$; y-intercept $= 6$

C. slope $= \frac{3}{2}$; x-intercept $= 6$; y-intercept $= 4$

D. slope $= -\frac{3}{2}$; x-intercept $= 6$; y-intercept $= 4$

27 Which feature describes perpendicular lines? Select the two that apply.

A. share a point

B. do not intersect

C. intersect at 90° angles

D. have the same slope

E. are equidistant along their lengths

28 The table shows the cost of having chairs delivered from a rental company.

Rental Company A	Rental Company B
$y = 6x + 50$	$25 for a delivery fee plus $7.50 for each chair delivered.

Given the functions shown, which statement is true?

A. The cost of having 30 chairs delivered is the same at both rental parlors.

B. The cost of having 30 chairs delivered from Rental Company A is more than the cost of having 30 chairs delivered from Rental Company B.

C. The cost at Rental Company A shows a greater rate of change than the cost at Rental Company B.

D. The initial cost at Rental Company A is greater than the initial cost at Rental Company B.

29 An object is launched off the ground along a path modeled by $h(t) = -6t^2 + 12t$, where h is the height of the object after t seconds. After how many seconds does the object hit the ground?

A. 0 seconds

B. 1 second

C. 2 seconds

D. 6 seconds

30 For $f(x) = 2x^2 - 6x$, what is the value of $f(4) = ?$

A. -8

B. -2

C. 4

D. 8

31 A plumbing company has 1,044 customers a year and wants to increase by 10% each year. If they meet this goal, about how many customers will they have after 2 years?

Exponential growth formula:
$f(x) = a(1 + r)^x$, where a = initial amount, r = percent growth, and x = time interval

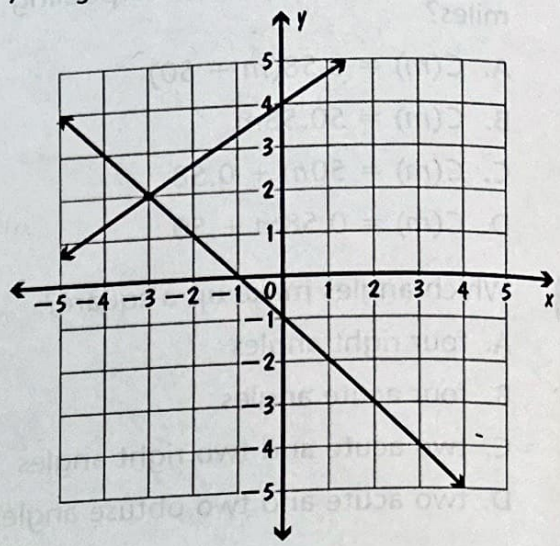
A. 1,263 customers

B. 1,348 customers

C. 1,503 customers

D. 2,297 customers

32 The following graph shows the following system of equations: $y = -x - 1$ and $y = \frac{2}{3}x + 4$.



Which of these describes the solution?

A. The system has one solution: $(-3, 2)$

B. The system has two solutions: $(0, 4)$ and $(0, -1)$

C. The system has no solution.

D. The system has infinitely many solutions.

33 A tractor was bought for $45,000 in 2019. The tractor depreciates in value by 8% each year. What is the approximate value of the tractor in 2023?

Exponential decay formula:
$f(x) = a(1 - r)^x$, a = initial amount, r = percent growth, and x = time interval

A. $72

B. $3,600

C. $32,238

D. $35,040

34 Leonard's Lakeside Event Center charges a fee of $525 plus $195 per hour to rent the center. Mr. and Mrs. Shah want to spend no more than $1,500 on the location of their anniversary celebration. Which of the following represents the number of hours Mr. and Mrs. Shah can rent the center?

A. 5 hours or more

B. More than 5 hours

C. 5 hours or less

D. Less than 5 hours

35 The function $f(x) = 150{,}000(1.04)^x$ represents the value of a house $f(x)$ in dollars x years after purchase. What does the rate of change tell you about the value of the house over time?

Exponential formula:
$f(x) = a(1 \pm r)^x$, a = initial amount, r = percent change, and x = time interval

A. The value of the house increases 104% each year.

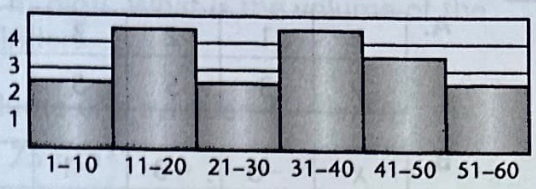
B. The value of the house increases 4% each year.

C. The value of the house increases 104% over its lifetime.

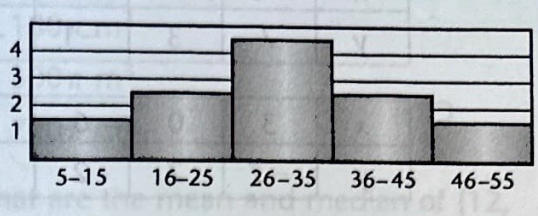
D. The value of the house increases 4% over its lifetime.

36 Which histogram is symmetric?

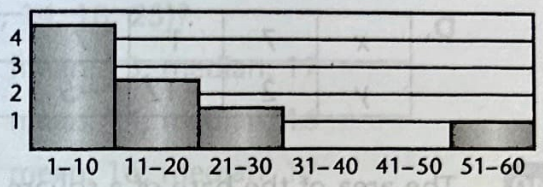
A.



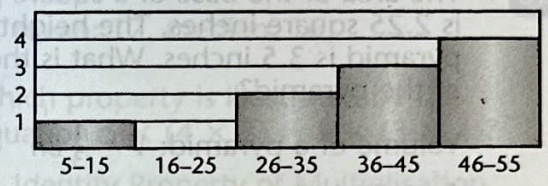
B.



C.



D.



37 A ball has a radius of 0.8 feet. What is the approximate volume of the ball? Use 3.14 for π.

Volume of a sphere: $V = \frac{4}{3}\pi r^3$

A. 19.29 ft^3

B. 10.05 ft^3

C. 2.68 ft^3

D. 2.14 ft^3

38 A two-way frequency table is shown. What is the probability that a male disagrees with the question in the sample?

	Male	Female	Total
Agree	54	39	93
Disagree	96	111	207
Total	150	150	300

A. 26%

B. 64%

C. 36%

D. 74%

39 Which two of the following are functions?

A.

x	1	2	3	2
y	3	5	5	1

B.

x	−5	−3	−1	0
y	7	3	−1	−3

C.

x	3	0	6	7
y	−7	2	2	9

D.

x	7	1	7	3
y	2	−12	−5	7

40 The area of the base of a square pyramid is 2.25 square inches. The height of the pyramid is 3.5 inches. What is the volume of the pyramid?

Volume of a pyramid: $V = \frac{1}{3}Bh$

A. 1.93 in.^{3}

B. 2.625 in.^{3}

C. 4.2 in.^{3}

D. 7.875 in.^{3}

41 The linear model $y = 27x + 120$ models the relationship between total number of popsicles sold, y, and x degrees of temperature change.

What does the slope mean in the context of the situation?

A. For every 1 popsicle sold, the temperature increases 27 degrees.

B. For every 1 popsicle sold, the temperature decreases 27 degrees.

C. For every degree increase in the temperature, the number of popsicles sold increases by 27.

D. For every degree increase in the temperature, the number of popsicles sold decreases by 27.

42 Use the quadratic formula to solve: $x^2 + 8x + 6 = 3x$

Quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

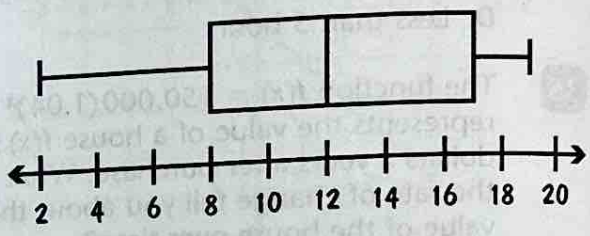
A. $x = -3, x = -2$

B. $x = -1, x = 6$

C. $x = 3, x = 2$

D. $x = 1, x = -6$

43 What is the median time?



A. 2

B. 8

C. 12

D. 20

44 A circle has a diameter of 12. What is the area of the circle?

Area of a circle: $A = \pi r^2$

A. 12π

B. 24π

C. 36π

D. 144π

45 The marketing team reported a strong positive correlation between the number of social media posts the company makes and the number of sales through the company's website.

What does the strong positive correlation mean in the context of the situation?

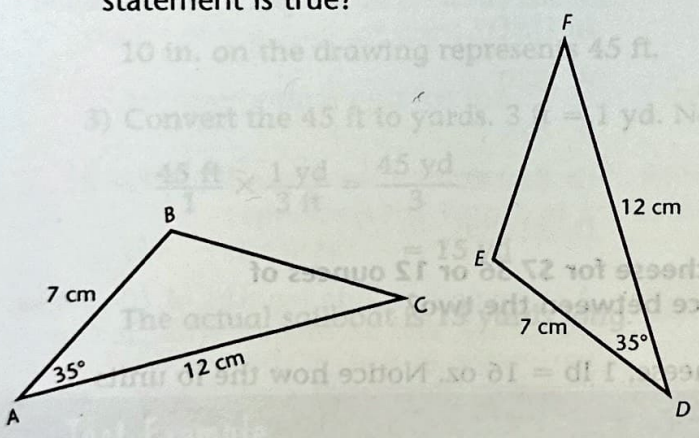
A. When the company increases the number of social media posts, the number of sales on its website decreases.

B. When the company increases the number of social media posts, the number of sales on its website increases.

C. When the number of sales on its website increases, the company decreases the number of posts on social media.

D. When the number of sales on its website increases, the company decreases the number of posts on social media.

46 Given the triangles shown below, which statement is true?



A. The triangles are similar, but not congruent.

B. The triangles are congruent, but not similar.

C. The triangles are congruent and similar.

D. The triangles are not congruent or similar.

47 A cylinder has a diameter of 5 m and is 12 m high. What is the volume of the cylinder?

Volume of a cylinder: $V = \pi r^2 h$

A. 75π m^3

B. 180π m^3

C. 300π m^3

D. 720π m^3

48 What are the mean and median of {12, 16, 14, 18, 25}?

A. mean: 13, median: 17

B. mean: 14, median: 16

C. mean: 16, median: 17

D. mean: 17, median: 16

49 Which property is illustrated by the equation $5 \times (4 \times 3) = 5 \times (3 \times 4)$?

A. Identity Property of Multiplication

B. Associative Property of Addition

C. Distributive Property

D. Commutative Property of Multiplication

50 An area has 154 people per square mile, and there are 331,562 people in the area. How many square miles is the area?

Population density: $D = \frac{\text{number of people}}{\text{area of land}}$

A. 2,036

B. 2,153

C. 2,154

D. 2,287

Instructions: For each question, fill in the circle that goes with the answer you choose. Fill in the circle completely and make your mark heavy and dark. You may erase the mark you made and make a new mark. Do not make any other marks on your answer sheet.

1. Ⓐ Ⓑ Ⓒ Ⓓ
2. Ⓐ Ⓑ Ⓒ Ⓓ
3. Ⓐ Ⓑ Ⓒ Ⓓ
4. Ⓐ Ⓑ Ⓒ Ⓓ
5. Ⓐ Ⓑ Ⓒ Ⓓ
6. Ⓐ Ⓑ Ⓒ Ⓓ
7. Ⓐ Ⓑ Ⓒ Ⓓ
8. Ⓐ Ⓑ Ⓒ Ⓓ
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47. Ⓐ Ⓑ Ⓒ Ⓓ
48. Ⓐ Ⓑ Ⓒ Ⓓ
49. Ⓐ Ⓑ Ⓒ Ⓓ
50. Ⓐ Ⓑ Ⓒ Ⓓ

Level A

Pretest

1. B. The area has three decimal places, so the side measurement should be reported to three decimal places. $4.253^2 = 18.088$. N.Q.3

2. D. $\frac{\$33.00}{1\ \cancel{\text{gallon}}} = \frac{1\ \cancel{\text{gallon}}}{4\text{ quarts}} = \frac{\$33.00}{4\text{ quarts}} = \$8.25/\text{quart}$; $\frac{\$32.50}{2\text{ quarts}} = \$16.25/\text{quart}$; $\$16.25 - \$8.25 = \$8.00$, so 1 gallon is \$8.00/quart less. N.Q.1

3. D. $(12a + 5d) - (4a + 2d) = (12a + 5d) + (-4a - 2d) = [12a + (-4a)] + [5d + (-2d)] = 8a + 3d$ A.APR.1

4. C. $D = rt = 65\frac{\text{mi}}{\cancel{\text{hr}}} \times 2.5\ \cancel{\text{hr}} = 162.5\text{ mi}$ N.Q.1

5. C. Go right on the x-axis to 52 and then go up to the point. Go left to see that this point has a y-value of 70. N.Q.3

6. D. A line is a straight path that extends infinitely in both directions, with no endpoints. A ray is a straight path with one endpoint and extends infinitely in one direction. G.CO.1

7. A. The polynomial $6x^2 + 12 - 3$ has three terms and a coefficient of six. A.SSE.1.a

8. D. $(5x^2)^3 = 5^3x^{2\cdot3} = 125x^6$ A.SSE.2

9. C. The radius is half of the diameter, so $r = 1.5$. $V = \frac{1}{3}\pi r^2h = \frac{1}{3}\pi(1.5^2)(6) = \frac{1}{3}\pi(2.25)6 = \frac{1}{3}\pi(13.5) = 4.5\pi\text{ in.}^3$ G.GMD.3

10. A. Add the lengths of the three sides. Rewrite and combine like terms. $(2a + 4b) + (a + 3b) + (3a - 2b) = [2a + a + 3a] + [4b + 3b + (-2b)] = 6a + 5b$ A.APR.1

11. A. Simplify the exponent, then evaluate inside the parentheses. $2(6 + 9 - 10) = 2(5) = 10$ A.SSE.2

12. B. The binomial is the difference of two squares. One factor has a plus sign and the other a minus sign. Find the square roots of the first and last terms. $16x^2 - 36 = (4x + 6)(4x - 6)$. The side lengths of the rectangle are $4x + 6$ units and $4x - 6$ units. A.SSE.2

13. B. Look at each y-value and see if three times that value is the matching x-value. Notice that a table (such as B or D) may have some correct pairs such as (0, 0) or (4, 12), but all of the matching pairs in the table must make the equation true. A.CED.2

14. C. Test some solutions to see if they are on the graph. For example, $(0,-3)$ is a solution to the equation, but that point is not on graph A or B or D. Check by using one more point, such as (5, 0). A.REI.10

15. A. The total hours add to 40 or less. The total earnings are equal to or greater than \$650. A.CED.3

16. B. Add $3r$ to both sides of the inequality and subtract 11 from both sides of the inequality. Then divide both sides of the inequality by 7. A.REI.3

17. B, D. Both of these line plots have a bell shape and are symmetric. S.ID.1, S.ID.3

18. C. (by elimination) Cancel the x terms. This gives you $2y = 14$, so $y = 7$. Then substitute 7 into the first equation and solve for x. $2x + 6(7) = 30 \rightarrow 2x + 42 = 30 \rightarrow 2x = -12 \rightarrow x = -6$ A.REI.6

19. C. To simplify the expression, rewrite. $\sqrt{144x^6} = \sqrt{144}\sqrt{x^6} = \sqrt{12^2}\sqrt{(x^3)^2} = 12x^3$ N.RN.2

20. D. Write the expression for the area. Use FOIL and combine like terms. $(2x + 4)(3x - 2) = 6x^2 - 4x + 12x - 8 = 6x^2 + 8x - 8$ A.APR.1

21. A, D. Two solutions on the graph are (0, 2) and (4, 10). A.REI.10

22. D. Total cost is \$0.58 times each mile plus the maintenance fee, \$50. F.BF.1

23. A. A square is made up of four 90° angles. G.CO.1

24. B. $f(1) - 5(1^2) = 5$; $f(3) = 5(3^2) = 45$; $A(x) = \frac{45 - 5}{3 - 1} = \frac{40}{2} = 20$ F.IF.6

25. B. Solving the proportion $\frac{12}{5} \times \frac{18}{x}$ for x gives $12x = 90$, which simplifies to $x = 7.5$. So, the shadow length cast by the 18 feet tall tree is 7.5 feet. G.SRT.5

26. B. The slope is the coefficient of x, or $-\frac{2}{3}$. The x-intercept is the point where the graph crosses the x-axis. The x-intercept has a y-value of 0. So, the x-intercept is the point (9, 0). The y-intercept is the point where the graph crosses the y-axis. The y-intercept has a x-value of 0. So, the y-intercept is (0, 6). A.CED.1, F.IF.7

27. A, C. Perpendicular lines form 90° angles. They also share a single point. Perpendicular lines intersect, so they are not equidistant along their lengths and do not have the same slope. G.CO.1

28. D. The y-intercept of Function A is 50, and the y-intercept of Function B is 25. Thus, the initial cost at Rental Company A is greater than the initial cost at Rental Company B. F.IF.9

29. C. Set the function equal to 0 to find the x-intercepts, which represent when the object hits the ground. The equation can be solved by factoring.

$$0 = -6t^2 + 12t$$
$$0 = -6t(t - 2)$$
$$0 = -6t; 0 = t - 2$$
$$0 = t, 2 = t$$

The object hits the ground after 2 seconds. A.CED.1, F.SSE.3.a, F.IF.4, F.IF.7

30. D. $f(4) = 2(4^2) - 6(4) = 2(16) - 24 = 32 - 24 = 8$ F.IF.2

31. A. The initial value of the function is 1,044 and the growth rate is 10%. The function is $f(x) = 1{,}044(1 + .10)^x = 1{,}044(1.10)^x$. The number of customers after 2 years is $f(2) = 1{,}044(1.10)^2 = 1{,}044(1.20) \approx 1{,}263$ customers. A.CED.1, F.IF.8.b, F.LE.1.c, F.IF.7

32. A. Since the lines intersect, the graph has one solution at the point $(-3, 2)$. A.REI.6

33. C. The initial value of the function is \$45,000 and the decay rate is 8%. The function is $f(x) = 45{,}000(1 - .08)^x = 45{,}000(.92)^x$. The value of the tractor after 4 years is $f(4) = 45{,}000(.92)^4 = 45{,}000(.71639296) \approx \$32{,}238$. A.CED.1, F.IF.8.b, F.LE.1.c, F.IF.7

34. C. The inequality that represents this situation is $525 + 195h \leq 1{,}500$. Subtract 525 from both sides and then divide both sides by 195 to get the solution: $h \leq 5$. A.CED.1

35. B. The growth factor is 104% − 100% = 4% which is an increase in value of 4% each year. F.LE.5

36. B. The histogram can be folded in the middle and both sides are congruent, so it is symmetric. S.ID.1, S.ID.3

37. D. $V = \frac{4}{3}\pi r^3 = \frac{4}{3}(3.14)(0.8^3) = \frac{4}{3}(3.14)(0.512) = \frac{4}{3}(1.60768) \approx 2.14 \text{ ft}^3$. G.GMD.3

38. B. $\frac{\textit{males who disagree}}{\textit{total number of males}} = \frac{96}{150} = 0.64$ S.ID.5

39. B, C. Each x-value in the tables for B and C is paired with a unique y-value. Both of these options are functions. F.IF.1

40. B. $V = \frac{1}{3}Bh = \frac{1}{3}(2.25)(3.5) = 2.625 \text{ in.}^3$ G.GMD.3

41. C. The slope indicates the change in y, total number of popsicles sold, for a change in temperature x. S.ID.7

42. A. $x^2 + 8x + 6 = 3x$; $x^2 + 8x - 3x + 6 = x^2 + 5x + 6$; $a = 1, b = 5, c = 6$

$$x = \frac{-5 \pm \sqrt{5^2 - 4(1)(6)}}{2(1)} =$$

$$\frac{-5 \pm \sqrt{25 - 24}}{2(1)} = \frac{-5 \pm \sqrt{1}}{2} = \frac{-5 \pm 1}{2}$$

A.REI.4

43. C. The median of a box plot is the vertical line in the center of the box. The median time is 12. S.ID.1, S.ID.3

44. C. The radius is half of the diameter, so $r = 6$. Substitute 6 into the area formula: $A = \pi r^2 = \pi 6^2 = 36\pi$. G.CO.1

45. B. A positive correlation means that as x increases, y also increases. In this case, x is the number of social posts, and y is the number of sales on the website. S.ID.9

46. C. The triangles are congruent by the SAS triangle congruence theorem. So, the triangles are congruent and similar. G.SRT.5

47. A. The radius is half of the diameter, so $r = 2.5$. $V = \pi r^2 h = \pi(2.5^2)(12) = \pi(6.25)(12) = 75\pi \text{ m}^3$. G.GMD.3

48. D. To find the mean, add the numbers to get 85 and divide by 5 to get 17. To find the median, order the numbers and select the middle one: 16 S.ID.3

49. D. The Commutative Property of Multiplication states that when you multiply two numbers, the order of the numbers does not change the product. A.REI.1

50. B. $D = \frac{\textit{number of people}}{\textit{area of land}}$; $154 = \frac{331{,}562}{x}$; $154x = 331{,}562$; $x = 2{,}153$. The area is 2,153 square miles. G.MG.2

Lesson 1 Use Units to Solve Multi-Step Problems

(N.Q.1)

1. D. $\frac{\$21.60}{15 \text{ ft}} = \$1.44/\text{ft}$; $\frac{\$1.44}{1 \text{ ft}} \times \frac{3 \text{ ft}}{1 \text{ yd}} = \$4.32/\text{yd}$

2. D. $\frac{\$12.00}{2 \text{ pints}} \times \frac{2 \text{ pints}}{1 \text{ quart}} = \frac{\$24.00}{2 \text{ quarts}} = \$12.00/\text{qt}$; $\frac{\$9.75}{3 \text{ quarts}} = \$3.25/\text{qt}$

\$12.00 − \$3.25 = \$8.75, so 3 quarts is \$8.75/qt less.

3. B. $\frac{60 \text{ mi}}{1 \text{ hr}} \times \frac{1.6 \text{ km}}{1 \text{ mi}} = 96 \text{ km/hr}$; 100 − 96 = 4 km/hr more.

4. A. $\frac{3 \text{ in.}}{10 \text{ ft}} = \frac{9 \text{ in.}}{x \text{ ft}}$; Cross-multiply to solve. $3x = 90$, $x = 30$ ft. $\frac{30 \text{ ft}}{1} \times \frac{1 \text{ yd}}{3 \text{ ft}} = 10 \text{ yd}$

5. C. $\frac{\$700}{4 \text{ nights}} = \$175/\text{night}$; $\frac{\$1{,}050}{7 \text{ nights}} = \$150/\text{night}$; \$175 − \$150 = \$25. So, the 7 nights buy is \$25/night less.

6. C. $\frac{\$6.48}{1.5 \text{ lb}} = \frac{\$4.32}{\text{lb}}$; $\frac{\$4.32}{16 \text{ oz}} = \frac{\$0.27}{\text{oz}}$; $\$0.27 \times 6 = \$1.62$.

7. A. $\frac{96 \text{ Euros}}{4} = 24 \text{ Euros/person}$; $\frac{24 \text{ Euros}}{1} \times \frac{\$1}{0.8 \text{ Euros}} = \$30$.

Contents

Unit 6 Geometry