Calculator-Active Section

Answer questions 1–42 on your answer sheet. You may use a calculator.

1 Mr. Fraser asked four students in his class to find the greatest common factor of 24 and 36. Donte answered 2, Annika answered 3, Noelia answered 6, and Scott answered 12. Which student answered correctly?

A Donte

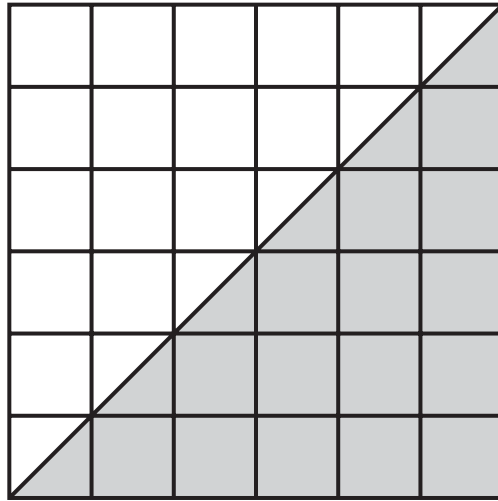**B** Annika

C Noelia

D Scott

2 Simplify. Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

$$14^2 - (5 - 3)^2 + (6 - 2)^2$$

Go On

3 What is the area of the gray triangle shown below?

A 36 square units

B 18 square units

C 12 square units

D 6 square units

4 Maria mixes $\frac{1}{4}$ cup white sugar and $\frac{2}{3}$ cup brown sugar to make a topping for some muffins. She uses $\frac{1}{12}$ cup of the mixture to top each muffin. How many muffins can she top?

A 5

B 6

C 11

D 12

5 Sarah sells beaded necklaces. She makes a profit of $4 on every necklace she sells. Which table represents the profit she makes?

PROFIT

A

Number of Necklaces Sold	Profit ($)
4	16
6	24
8	32
10	40

PROFIT

B

Number of Necklaces Sold	Profit ($)
4	8
6	10
8	12
10	14

PROFIT

C

Number of Necklaces Sold	Profit ($)
4	4
6	8
8	12
10	16

PROFIT

D

Number of Necklaces Sold	Profit ($)
4	16
6	20
8	24
10	28

Go On

6 Luke jogged 20.25 miles last week. He jogged the same distance, *d*, on each of 3 days. Marcus said that Luke jogged 17.25 miles on the first day since 20.25 − 3 = *d*, so *d* = 17.25.

Which explains why Marcus is wrong?

A The actual distance can be found using the equation $3d = 20.25$, and the solution is $d = 5.75$. Luke jogged 5.75 miles the first day.

B The actual distance can be found using the equation $3 \div d = 20.25$, and the solution is $d = 0.15$. Luke jogged 0.15 mile the first day.

C The actual distance can be found using the equation $3d = 20.25$, and the solution is $d = 6.75$. Luke jogged 6.75 miles the first day.

D The actual distance can be found using the equation $d \div 3 = 20.25$, and the solution is $d = 60.75$. Luke jogged 60.75 miles the first day.

7 The table below shows the number of home runs hit last year by each of the 8 teams in a local baseball league.

HOME RUNS HIT IN A LOCAL BASEBALL LEAGUE

Team	Number of Home Runs
Americans	54
Bombers	48
Comets	50
Dingers	36
Exterminators	50
Flames	44
Ghosts	39
Hurricanes	55

What is the median number of home runs hit by these teams last year? Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

8 Julio needs to fold a piece of paper that is 2.5 times as long as it is wide for a paper-folding art project. He can use the equation $l \div w = 2.5$ to represent the situation.

Which dimensions describe a piece of paper that Julio could use?

A 4 inches wide and 10 inches long

B 5 inches wide and 8 inches long

C 6.5 inches wide and 9 inches long

D 7 inches wide and 14 inches long

9 The diagram below is the net of a right triangular prism.

6 cm

12 cm

6 cm 8 cm

10 cm

6 cm

[not drawn to scale]
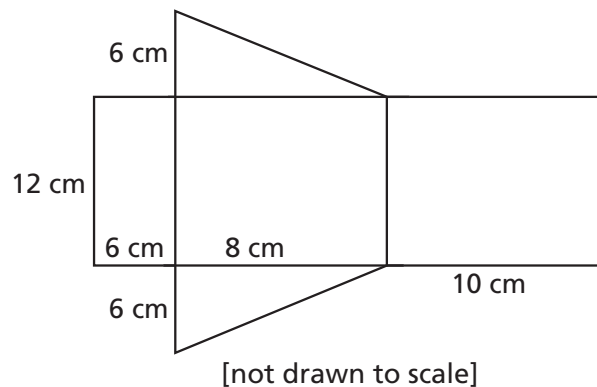
What is the surface area of the triangular prism?

A 288 cm²

B 312 cm²

C 336 cm²

D 368 cm²

Go On

10 The formula below is used to convert a temperature in degrees Fahrenheit, *F*, to a temperature in degrees Celsius, *C*.

$$C = \frac{5}{9}(F - 32)$$

What is the temperature in degrees Celsius that is equivalent to a temperature of 40°F?

A $1\frac{4}{9}$ °C

B $9\frac{7}{9}$ °C

C $4\frac{4}{9}$ °C

D $22\frac{2}{9}$ °C

11 Square *QRST* has vertices *Q*(2, 8), *R*(−4, 8), *S*(−4, 2), and *T*(2, 2). Triangle *QTU* shares 2 vertices with square *QRST*.

Which ordered pair describes a possible point *U* if the area of triangle *QTU* is the same as the area of square *QRST*?

A (8, 2)

B (14, 8)

C (8, 8)

D (2, 14)

12 In an art class, 40% of the students used watercolors for painting. Ten students in the art class used watercolors. How many students were there in the class? Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

13 What is the value of the expression $\frac{x}{2} + y^2$ when $x = 8$ and $y = 4$?
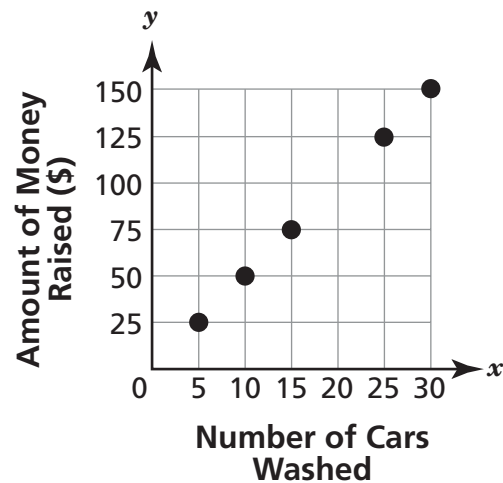
A 4

B 16

C 18

D 20

14 Quadrilateral *PQRS* has coordinates $P(8, {}^{-}8)$, $Q(2, {}^{-}8)$, and $R(2, {}^{-}4)$. Which ordered pair for point *S* would give the quadrilateral the ***greatest*** area?

A $(6, {}^{-}4)$

B $(7, {}^{-}4)$

C $(8, {}^{-}2)$

D $(8, {}^{-}6)$

Go On

15 A football team holds a car wash as a fundraiser. The team makes this graph to see how much money they could raise from washing cars.

Which table models the data in the graph?

Number of Cars Washed	Amount of Money Raised
5	25
10	50
15	75
25	125
30	150

A

Number of Cars Washed	Amount of Money Raised
5	25
10	50
15	75
25	125
30	175

C

Number of Cars Washed	Amount of Money Raised
25	5
50	10
75	15
125	25
150	30

B

Number of Cars Washed	Amount of Money Raised
25	5
50	10
75	15
125	25
175	30

D

16 Which statement is *true*?

A The least common multiple of 4 and 8 is 16.

B The least common multiple of 4 and 10 is 40.

C The least common multiple of 6 and 10 is 30.

D The least common multiple of 6 and 8 is 48.

17 Carly has some rope to mark off a rectangular area of grass for a field day game. The rectangle needs to be 6 feet wide. Which expression represents how much rope Carly needs if the rectangle is *g* feet long?

A $2g + 16$

B $2g + 12$

C $2(g + 12)$

D $2g + 2(6 + 6)$

18 The line plot below shows the scores students in Ms. Chan's class received on their chapter test. Two more scores will be added to the plot. Which value for both scores would make the data distribution *more* symmetrical?
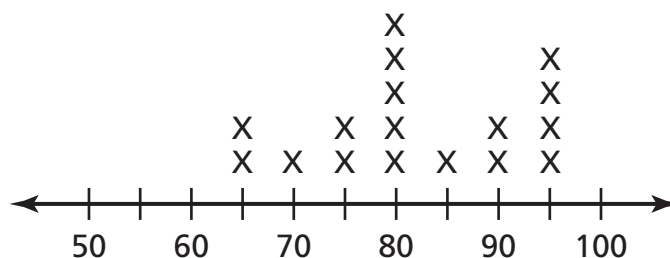
A 95

B 85

C 75

D 65

Go On

19 Four friends tried to rewrite the expression 24 + 40 using the distributive property.

Name	Expression
Anna	8(4 + 5)
Mila	4(6 + 8)
Lara	4(6 + 9)
Ryder	8(3 + 5)

Who wrote a correct expression?

A   Anna

B   Mila

C   Lara

D   Ryder

20 The diagram below is the net of a right triangular prism.
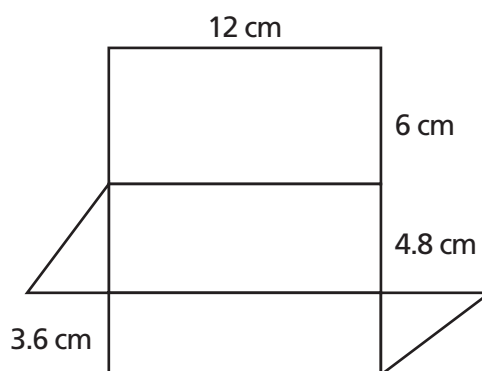
What is the surface area of the prism?

A   207.36 cm²

B   190.08 cm²

C   181.44 cm²

D   172.8 cm²

21 Which expression is equivalent to $4 + 8x$?

A $8(x + 2) - 4$

B $8(x + 1) - 4$

C $2(2 + 6x)$

D $4(1 + x)$

22 A stock's value in dollars changed by $^-5.75$ on Monday and $+3.25$ on Tuesday. Which statement correctly compares the changes in the stock's value?

A The value changed more on Monday because $|^-5.75| > |3.25|$.

B The value changed more on Monday because $^-5.75 < 3.25$.

C The value changed more on Tuesday because $+3.25 > 0$.

D The value changed more on Tuesday because $3.25 > ^-5.75$.

23 What is the volume, in cubic inches, of the right rectangular prism shown below?

8 in.

$4\frac{1}{2}$ in.

$12\frac{1}{2}$ in.

[not drawn to scale]
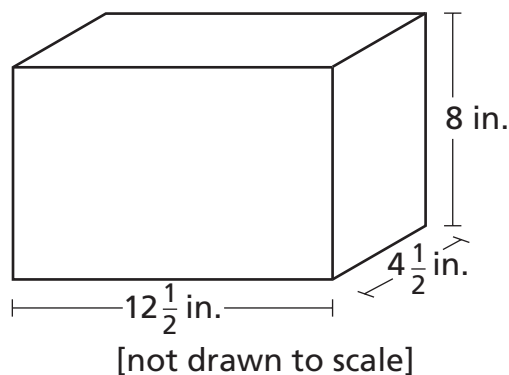
A 25 cubic inches

B $120\frac{1}{2}$ cubic inches

C $384\frac{1}{2}$ cubic inches

D 450 cubic inches

Go On

24 Michael starts with $45 in his savings account and adds $5 to the account each week. After *w* weeks, the number of dollars in Michael's account can be represented by the expression below.
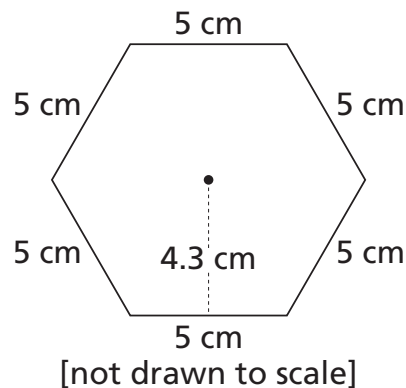
$$5w + 25$$

What conclusion can be supported by the expression?

A Michael deposited an extra $20 into his account.

B Michael saved an extra $4 each week.

C Michael withdrew $20 from his account.

D Michael spent $4 from his account.

25 Consider the regular hexagon shown below. Measurements are given to the nearest 0.1 centimeter.

5 cm
5 cm   5 cm
5 cm   4.3 cm   5 cm
5 cm
[not drawn to scale]

What is the area of the hexagon?

A 64.5 cm²

B 30 cm²

C 21.5 cm²

D 10.75 cm²

26 Which expression is equivalent to $18x + 45$?

   A $9(5x + 2)$

   B $9(2x + 5)$

   C $3(2x + 15)$

   D $3(6x - 5)$

27 What is the constant term in the expression $x^2 + 2x + 7y + 8$?

   A   1

   B   2

   C   7

   D   8

28 On one day, the temperature outside did not get above 6°F. Which number line represents the possible temperatures that day?
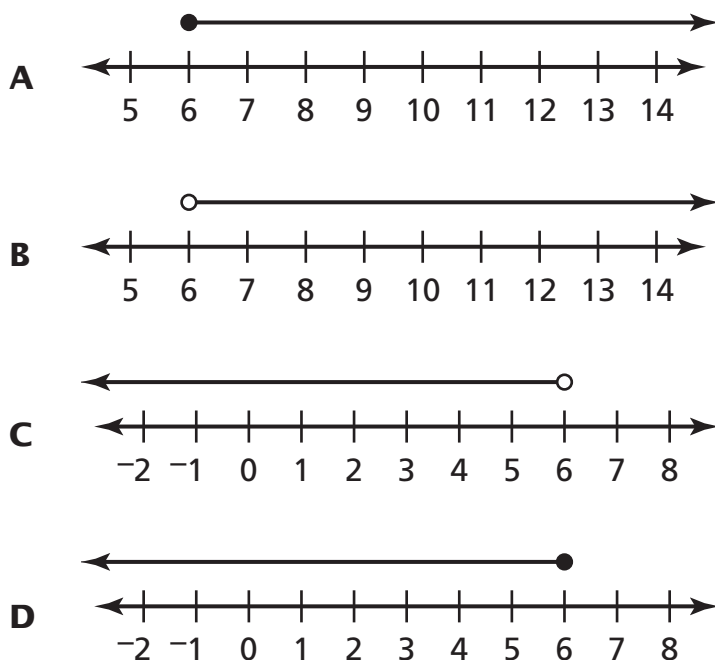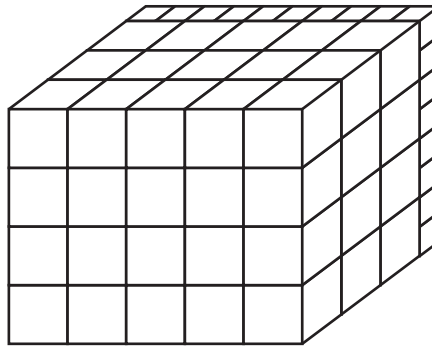

Go On

29 Vincent burns 30 calories walking for 10 minutes. At this rate, how many calories will he burn in 15 minutes?

  A 33 calories

  B 35 calories

  C 40 calories

  D 45 calories

30 A rectangular prism is shown below.

[not drawn to scale]

KEY
= 1 cubic in.
= 0.125 cubic in.
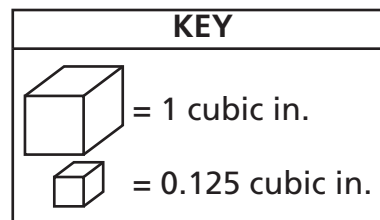
What is the volume of the prism?

  A 60 cubic inches

  B 70 cubic inches

  C 80 cubic inches

  D 90 cubic inches

31 Hector waters his lawn if it does not get at least $1\frac{1}{2}$ inches of rain each week. It has rained $\frac{3}{8}$ inch already this week. Which inequality represents the number of inches of rain, r, Hector's lawn still needs so that he won't have to water it?

A $r \geq 1\frac{7}{8}$

B $r > 1\frac{7}{8}$

C $r \geq 1\frac{1}{8}$

D $r > 1\frac{1}{8}$

Go On

**32** The dot plots show the numbers of hours two different groups of students spend online each week.

Group A
TIME SPENT ONLINE

Number of Hours

Group B
TIME SPENT ONLINE

Number of Hours
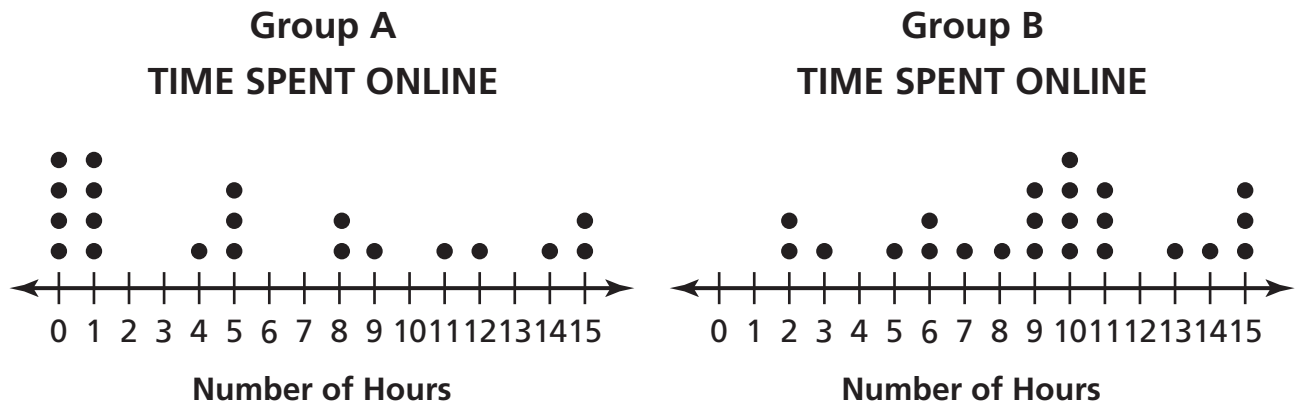
Which statement correctly compares the data?

A   The measures of center are closer to each other for Group A than for Group B.

B   The measures of center are higher for Group A than for Group B.

C   The variability in Group A is greater than the variability in Group B.

D   The variability in Group A is less than the variability in Group B.

33 What is the distance between points *A* and *B*?
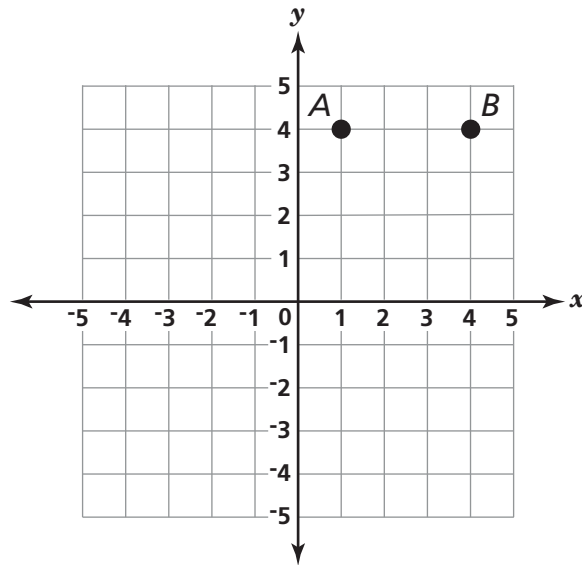
A 2 units

B 3 units

C 4 units

D 5 units

34 A storage building in the shape of a rectangular prism, is 7 meters wide, 8 meters tall, and $39\frac{1}{2}$ meters long. What is the volume of the building?

A 2,212 m³

B 1,297 m³

C 1,106 m³

D 218 m³

Go On

35 Which expression is equivalent to $a + a + a + b + b + b$?

A $3a + b$

B $a + 3b$

C $3a + 3b$

D $3 + ab$

36 Two diagonally opposite vertices of a square on a coordinate grid are located at (–5, 7), (1, 1). What is the perimeter of the square?

A 12 units

B 16 units

C 24 units

D 32 units

37 Kendra spent $1\frac{7}{12}$ hours making and eating dinner. If she spent $\frac{3}{4}$ hour making dinner, which correctly shows how to find the amount of time, d, Kendra spent eating dinner?

A $d + \frac{3}{4} = 1\frac{7}{12}; d = \frac{5}{6}; \frac{5}{6}$ hour

B $d - \frac{3}{4} = 1\frac{7}{12}; d = 2\frac{1}{3}; 2\frac{1}{3}$ hours

C $1\frac{7}{12} + \frac{3}{4} = d; d = 2\frac{1}{3}; 2\frac{1}{3}$ hours

D $\frac{3}{4} - 1\frac{7}{12} = d; d = \frac{5}{6}; \frac{5}{6}$ hour

38 Which inequality has infinitely many *negative integer* solutions?

A $x > {}^-5$

B $5 < x$

C $x \geq {}^-10$

D $x \leq 10$

39 Which expression is equivalent to $4(7x + 5)$?

A $7x + 9$

B $11x + 9$

C $28x + 5$

D $28x + 20$

40 Arthur's garden is in the shape shown below.

50 feet

40 feet

80 feet

[not drawn to scale]
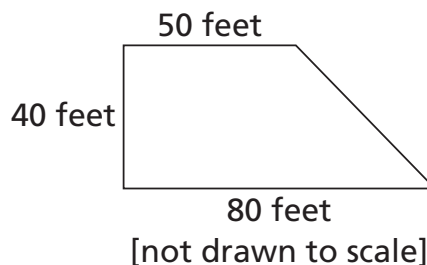
What is the area of the garden?

A 2,600 square feet

B 3,000 square feet

C 3,600 square feet

D 5,200 square feet

41 Mason divides $\frac{3}{4}$ pound of nuts into equal-weight servings with no nuts left over. Which could *not* be the weight of one serving of the nuts?

A $\frac{1}{8}$ pound

B $\frac{3}{16}$ pound

C $\frac{1}{2}$ pound

D $\frac{3}{8}$ pound

42 Jamaal thinks the equation $\frac{2}{7} \div \frac{3}{5} = \frac{10}{21}$ is true. Which of the following can Jamaal use to check his thinking?

A Verify that $\frac{2}{7} \times \frac{3}{5}$ is equal to $\frac{21}{10}$.

B Verify that $\frac{10}{21} \times \frac{3}{5}$ is equal to $\frac{2}{7}$.

C Verify that $\frac{10}{21} \times \frac{2}{7}$ is equal to $\frac{3}{5}$.

D Verify that $\frac{10}{21} \div \frac{3}{5}$ is equal to $\frac{2}{7}$.

STOP

Calculator-Inactive Section

Answer questions 43–65 on your answer sheet. You may NOT use a calculator.

43 Which statement is *true* about the expression $7(2x + 5)$?

A The expression has two factors.

B The expression has three factors.

C The factor $2x + 5$ has three terms.

D The expression is the sum of three terms.

44 The table below shows the elevations of some locations around the world that are below sea level. Sea level is represented by an elevation of 0 meters.

Location	Elevation
Death Valley, United States	-86 meters
Lake Eyre, Australia	-16 meters
Lago Enriquillo, Dominican Republic	-46 meters
Laguna Salada, Mexico	-10 meters

Which statement is true?

A Death Valley has the greatest elevation.

B Lake Eyre has a greater elevation than Laguna Salada.

C Lago Enriquillo is farther than Death Valley from sea level.

D Laguna Salada is closer than Lago Enriquillo to sea level.

45 Which expression *best* represents the statement?

"A number multiplied by 4 is subtracted from the difference of the same number and 65."

A $4x - (x - 65)$

B $4x - x - 65$

C $(x - 65) - 4x$

D $x - 65 + 4x$

46 Mrs. Benjamin analyzed the scores her 24 students earned on their most recent vocabulary test. The results were a mean score of 76 (out of 100), a median score of 80, and a range of 38. Which statement must be true about the scores the students earned?

A The lowest score earned by any student was a 38.

B 50% of the students earned a score of 80 or higher.

C 50% of the students earned a score of 76 or lower.

D The highest score earned by any student was an 80.

47 Josie planted 3 rows of petunias. She also planted 2 more rows of zinnias than petunias. There are the same number of flowers in each row. Which sentence describes the ratio of zinnias to petunias?

A For every 5 zinnias, there are 3 petunias.

B For every 3 zinnias, there are 5 petunias.

C For every 8 petunias, there are 5 zinnias.

D For every 3 petunias, there are 8 zinnias.

Go On

48 Which expression *correctly* represents the expression 7^4?

A $4 + 7$

B 4×7

C $7 + 4 + 7 + 4 + 7 + 4 + 7 + 4$

D $7 \times 7 \times 7 \times 7$

49 Refer to the number line below.
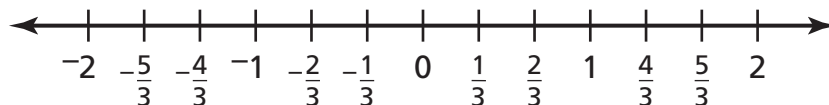
Which statement is *true*?

A Since $^-2$ is to the left of 1, $^-2 < 1$.

B Since $^-1$ is to the left of 1, $^-1 = 1$.

C Since $^-2$ is to the left of $\frac{1}{3}$, $^-2 > \frac{1}{3}$.

D Since $^-2$ is to the left of $^-1$, $^-1 < {}^-2$.

50 What is the sum of 58.3 and 12.08?

A 6.038

B 60.38

C 70.38

D 703.8

51 A can of tomato soup contains 8 ounces of soup. One ounce is approximately equal to 28.35 grams. How many grams of soup are in the can? Express your answer to the nearest tenth of a gram. Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

52 The following equation is true.

$$-(-p) = p$$

Which **best** describes the value of p?

A It must be a negative number.

B It can be any number.

C It must be 0.

D It must be 1.

Go On

53 Kate pays $36 for 2 sets of candles. Each set contains 3 red candles and 3 white candles. What is the cost per candle in these sets?

A $3

B $4

C $6

D $8

54 Lourdes recorded in this table the change in her dog's weight, in pounds, each month.

January	February	March	April	May
+3	+4	−2	+1	−5

Which statement about the data is true?

A   Lourdes' dog lost weight in more months than it gained weight because −5 has the greatest absolute value and it is a negative number.

B   Lourdes' dog gained weight every month because it is getting older.

C   Lourdes' dog lost weight every month because the change in May is a negative number.

D   Lourdes' dog gained weight in more months than it lost weight because there are more positive numbers than negative numbers.

55 Susan is creating a survey. Which question is a statistical question and could be part of the survey?

A   "Who is the governor of North Carolina?"

B   "Is 13 a prime number?"

C   "What is the first month of the year?"

D   "Would you vote for me for class president?"

56 Cho surveyed some of her classmates to find out how many other states each had visited. Her results are shown here.

1, 5, 0, 7, 6, 2, 0, 1, 2, 4, 1

Which box plot *best* displays these data?

A

Number of States Visited

B

Number of States Visited

C

Number of States Visited

D

Number of States Visited

Go On
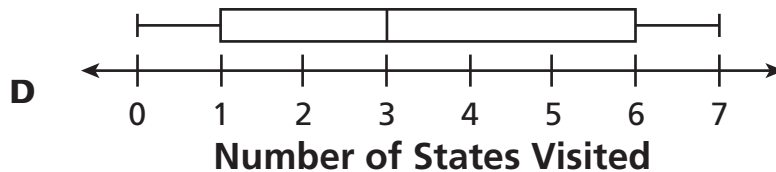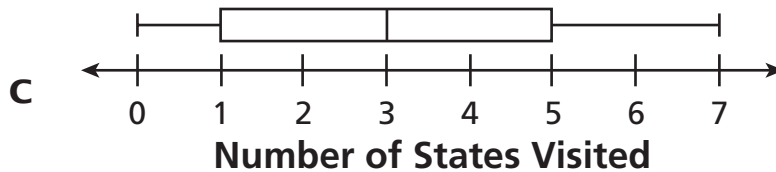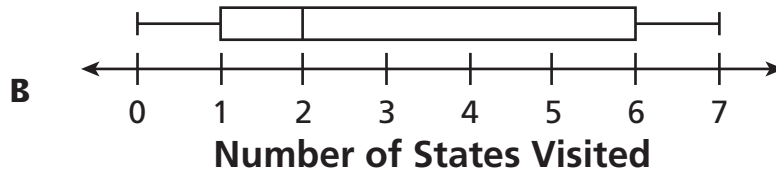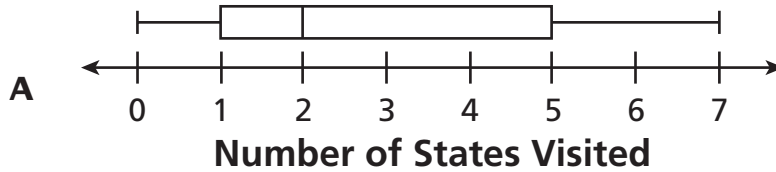
57 In which quadrant does the point (−2, 5) lie?
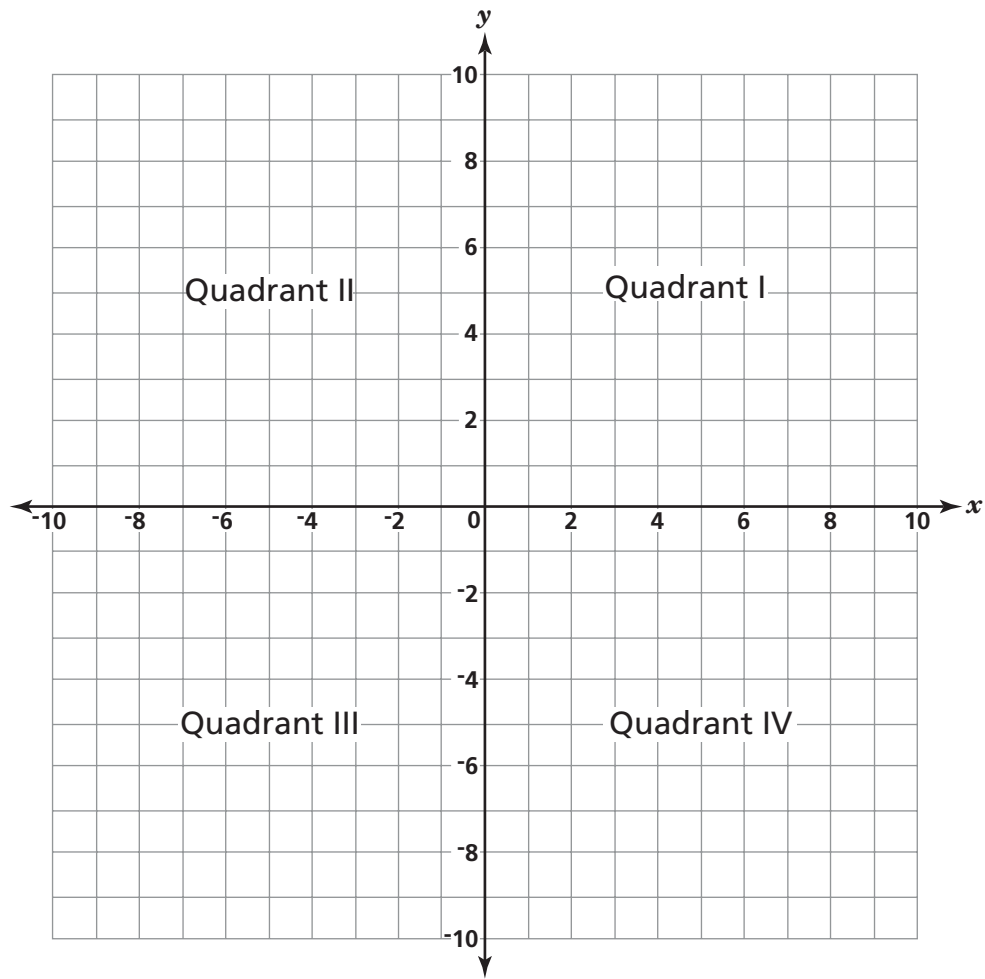
A   Quadrant I

B   Quadrant II

C   Quadrant III

D   Quadrant IV

58 In golf, 0 represents a score of par, and a player's score describes how far it is from par. In the table below, which golfer's score is farthest from par?

Golfer	Score
Cortez	−3
Langley	0
Hopkins	4
Chin	−5

A   Cortez

B   Langley

C   Hopkins

D   Chin

59 What is the opposite of the opposite of $-6\frac{3}{4}$?

A $-6\frac{3}{4}$

B $-\frac{4}{27}$

C   0

D $6\frac{3}{4}$

Go On

60 What is 1,476 divided by 12? Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

61 Use the grid below.

A (−5, 6)
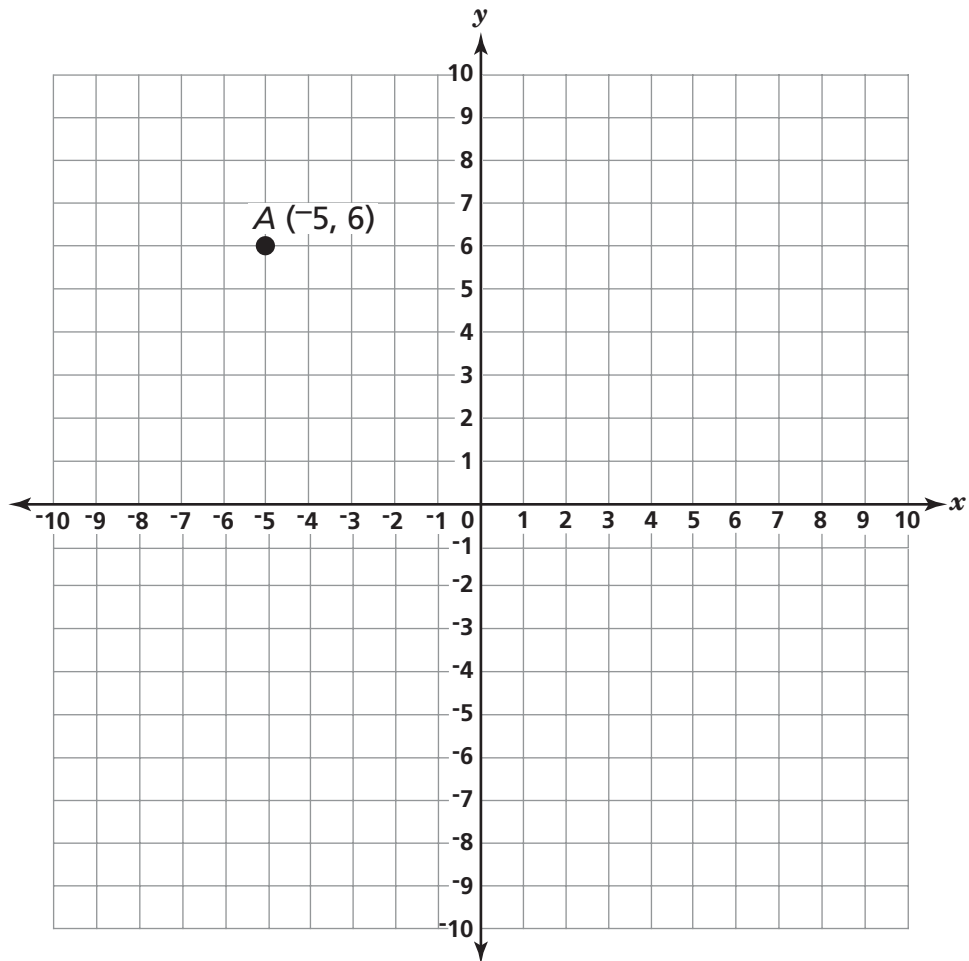
Which ordered pair represents point *A* reflected across the *y*-axis?

A (−6, −5)

B (−5, −6)

C (5, 6)

D (6, 5)

62 Rachel earns a constant hourly rate for working part time at a clothing store. The graph below shows her earnings.
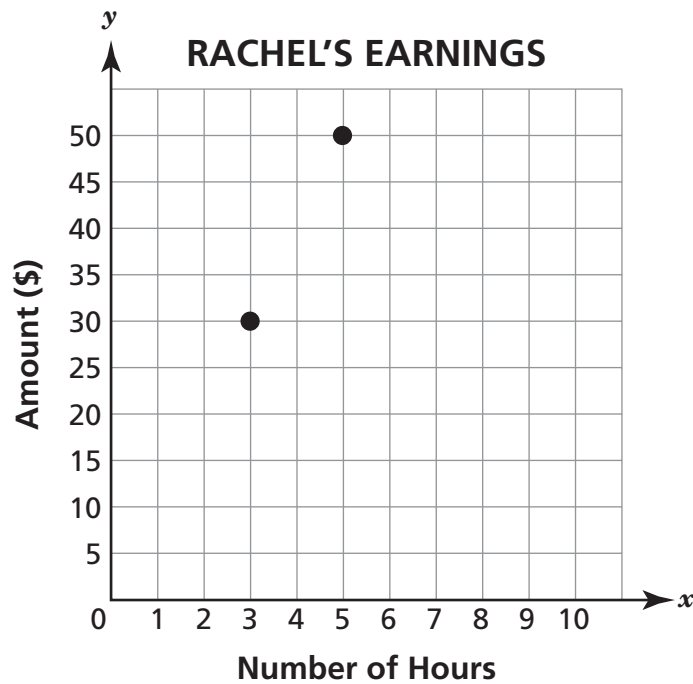
RACHEL'S EARNINGS

Which equation represents the relationship between the number of hours Rachel worked, x, and her earnings, y?

A $y = 10x$

B $y = 20x$

C $y = x + 10$

D $y = x + 20$

63 What is the product of 14.5 and 20.2? Record your answer and fill in the bubbles on your answer document.

Go On

64 Stephan is gathering data about the growth of saplings in the local forest for a biology project. Which *most likely* describes how Stephan collected the data?

  A He measured the distances between different saplings.

  B He counted the total number of saplings.

  C He recorded the types of saplings in the forest.

  D He measured the heights of the saplings.

65 Which point on the number line *best* represents $-\dfrac{6}{8}$?
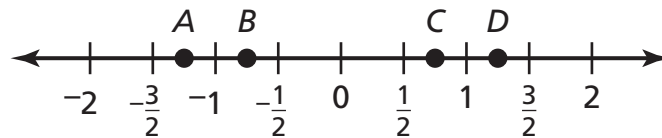
  A point *A*

  B point *B*

  C point *C*

  D point *D*

STOP

Ready® North Carolina—Mathematics Assessments, Grade 6
Answer Form

Name_____

Teacher_____ Grade_____

School_____ City_____

Assessment 1

1. Ⓐ Ⓑ Ⓒ Ⓓ

2. [grid-in bubble response]

3. Ⓐ Ⓑ Ⓒ Ⓓ
4. Ⓐ Ⓑ Ⓒ Ⓓ
5. Ⓐ Ⓑ Ⓒ Ⓓ
6. Ⓐ Ⓑ Ⓒ Ⓓ

7. [grid-in bubble response]

8. Ⓐ Ⓑ Ⓒ Ⓓ
9. Ⓐ Ⓑ Ⓒ Ⓓ
10. Ⓐ Ⓑ Ⓒ Ⓓ
11. Ⓐ Ⓑ Ⓒ Ⓓ

12. [grid-in bubble response]

13. Ⓐ Ⓑ Ⓒ Ⓓ
14. Ⓐ Ⓑ Ⓒ Ⓓ
15. Ⓐ Ⓑ Ⓒ Ⓓ
16. Ⓐ Ⓑ Ⓒ Ⓓ
17. Ⓐ Ⓑ Ⓒ Ⓓ
18. Ⓐ Ⓑ Ⓒ Ⓓ
19. Ⓐ Ⓑ Ⓒ Ⓓ
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23. Ⓐ Ⓑ Ⓒ Ⓓ
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25. Ⓐ Ⓑ Ⓒ Ⓓ
26. Ⓐ Ⓑ Ⓒ Ⓓ
27. Ⓐ Ⓑ Ⓒ Ⓓ
28. Ⓐ Ⓑ Ⓒ Ⓓ
29. Ⓐ Ⓑ Ⓒ Ⓓ
30. Ⓐ Ⓑ Ⓒ Ⓓ
31. Ⓐ Ⓑ Ⓒ Ⓓ
32. Ⓐ Ⓑ Ⓒ Ⓓ
33. Ⓐ Ⓑ Ⓒ Ⓓ
34. Ⓐ Ⓑ Ⓒ Ⓓ
35. Ⓐ Ⓑ Ⓒ Ⓓ

36. Ⓐ Ⓑ Ⓒ Ⓓ
37. Ⓐ Ⓑ Ⓒ Ⓓ
38. Ⓐ Ⓑ Ⓒ Ⓓ
39. Ⓐ Ⓑ Ⓒ Ⓓ
40. Ⓐ Ⓑ Ⓒ Ⓓ
41. Ⓐ Ⓑ Ⓒ Ⓓ
42. Ⓐ Ⓑ Ⓒ Ⓓ
43. Ⓐ Ⓑ Ⓒ Ⓓ
44. Ⓐ Ⓑ Ⓒ Ⓓ
45. Ⓐ Ⓑ Ⓒ Ⓓ
46. Ⓐ Ⓑ Ⓒ Ⓓ
47. Ⓐ Ⓑ Ⓒ Ⓓ
48. Ⓐ Ⓑ Ⓒ Ⓓ
49. Ⓐ Ⓑ Ⓒ Ⓓ
50. Ⓐ Ⓑ Ⓒ Ⓓ

51. [grid-in bubble response]

52. Ⓐ Ⓑ Ⓒ Ⓓ
53. Ⓐ Ⓑ Ⓒ Ⓓ
54. Ⓐ Ⓑ Ⓒ Ⓓ
55. Ⓐ Ⓑ Ⓒ Ⓓ
56. Ⓐ Ⓑ Ⓒ Ⓓ
57. Ⓐ Ⓑ Ⓒ Ⓓ
58. Ⓐ Ⓑ Ⓒ Ⓓ
59. Ⓐ Ⓑ Ⓒ Ⓓ

Name_____

Teacher_____ Grade_____

School_____ City_____

Assessment 1 *(continued)*

60.

61. Ⓐ Ⓑ Ⓒ Ⓓ
62. Ⓐ Ⓑ Ⓒ Ⓓ

63.

64. Ⓐ Ⓑ Ⓒ Ⓓ
65. Ⓐ Ⓑ Ⓒ Ⓓ

Assessment 2

1. Ⓐ Ⓑ Ⓒ Ⓓ
2. Ⓐ Ⓑ Ⓒ Ⓓ
3. Ⓐ Ⓑ Ⓒ Ⓓ
4. Ⓐ Ⓑ Ⓒ Ⓓ
5. Ⓐ Ⓑ Ⓒ Ⓓ
6. Ⓐ Ⓑ Ⓒ Ⓓ
7. Ⓐ Ⓑ Ⓒ Ⓓ
8. Ⓐ Ⓑ Ⓒ Ⓓ
9. Ⓐ Ⓑ Ⓒ Ⓓ
10. Ⓐ Ⓑ Ⓒ Ⓓ
11. Ⓐ Ⓑ Ⓒ Ⓓ

12.

13. Ⓐ Ⓑ Ⓒ Ⓓ
14. Ⓐ Ⓑ Ⓒ Ⓓ
15. Ⓐ Ⓑ Ⓒ Ⓓ
16. Ⓐ Ⓑ Ⓒ Ⓓ
17. Ⓐ Ⓑ Ⓒ Ⓓ
18. Ⓐ Ⓑ Ⓒ Ⓓ
19. Ⓐ Ⓑ Ⓒ Ⓓ

20. Ⓐ Ⓑ Ⓒ Ⓓ
21. Ⓐ Ⓑ Ⓒ Ⓓ
22. Ⓐ Ⓑ Ⓒ Ⓓ
23.

24. Ⓐ Ⓑ Ⓒ Ⓓ
25. Ⓐ Ⓑ Ⓒ Ⓓ
26. Ⓐ Ⓑ Ⓒ Ⓓ

Cut along the dotted line.