

Student Name _____

Mississippi Curriculum Test,
Second Edition

MCT2

GRADE

7

PRACTICE
TEST BOOK

MISSISSIPPI



MATHEMATICS

Mark your answers for questions 1–60 on your answer document. Mark only one answer for each question. You may write in your test booklet, but you must mark your answers on your answer document.

1. What is the value of the expression shown below?

$$4 \times [(6 + 4) \times 10] + 16 \div 2^3$$

- A. 52
B. 69.3
C. 402
D. 800

2. Two-fifths of the runners completed a race in under an hour.

Which decimal is equivalent to $\frac{2}{5}$?

- F. 0.60
G. 0.40
H. 0.25
J. 0.20

3. What is the scientific notation for the value of $(15 \times 10^5) \div (5 \times 10^3)$?

- A. 3×10^2
B. 3×10^8
C. 20×10^2
D. 75×10^2

4. Nyssa made the table below to show the relation between the side lengths and the areas of various poster boards.

Side Length (in feet)	Area (in square feet)
1	1
2	4
3	9
4	16

What is the relation between the area (a) and side length (s) in the table?

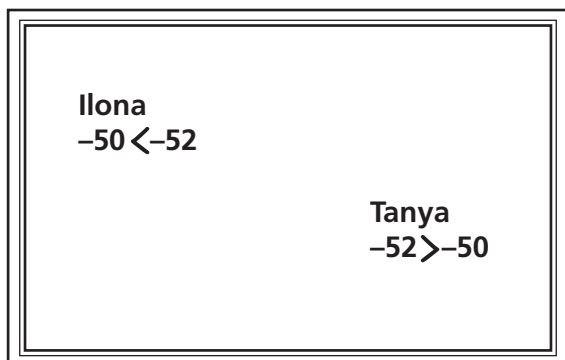
- F. $a = s^2$
G. $a = s^3$
H. $a = 3s - 2$
J. $a = 3s + 2$

5. Measurements showed that the water level of the reservoir was 150.8 feet on the last day of April. On the last day of May the level had dropped 31.65 feet.

What was the measurement of the water level on the last day of May?

- A. 182.45 feet
B. 165.7 feet
C. 119.15 feet
D. 46.73 feet

6. Ilona and Tanya were asked to write a number sentence on the whiteboard using the integers -50 and -52 . The sentence each wrote appears below.



Which is true of the two number sentences?

- F. Ilona wrote an incorrect inequality; Tanya wrote a correct inequality.
- G. Ilona wrote a correct inequality; Tanya wrote an incorrect inequality.
- H. Both Ilona and Tanya wrote a correct inequality.
- J. Both Ilona and Tanya wrote an incorrect inequality.

7. The following table shows the types of pets that students own. A circle graph of this data shows that 25% of the students own a dog.

Pets Students Own

Pet	Number of Students
Cat	
Dog	
Fish	
Other	

Which statement justifies that the circle graph is not correct?

- A. The percentage of students who own a dog is about 25% in the table.
- B. Using the proportion $\frac{11}{36} = \frac{x}{100}$ where x is the percentage would be more than 25.
- C. The percentage of students who own the other three types of pets is about 75% in the table.
- D. Using the proportion $\frac{25}{36} = \frac{x}{100}$ where x is the percentage would be 75.

8. A student correctly recognized the rule used on the value of each term to produce the next term in the following pattern.

4, 11, 25, 53, ...

Which rule did the student recognize?

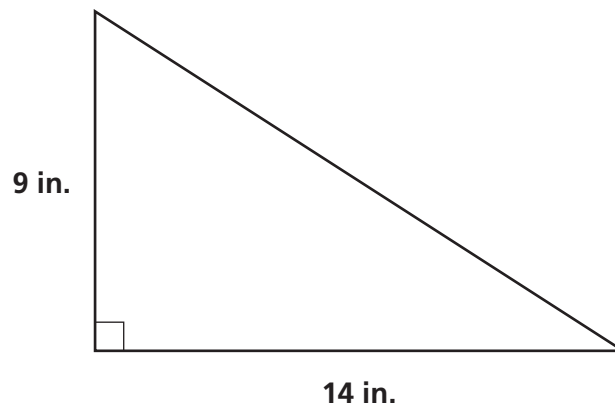
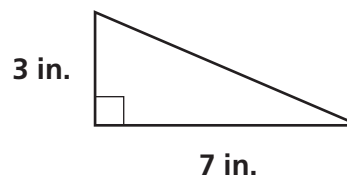
- F. Add 3
- G. Add 7
- H. Double the number
- J. Double the number and add 3

9. The fuel tank in Abigail's truck holds 21 gallons of gas and currently has 13.8 gallons of gas in it. She uses the equation $x - 13.8 = 21$ to find x , the amount of gas needed to completely fill the tank.

How should Abigail correct her equation?

- A. She should subtract 21 from x .
- B. She should add 21 to x .
- C. She should subtract x from 13.8.
- D. She should add x to 13.8.

10. A mathematics student concluded that the following two triangles were not congruent.



Why is the student correct?

- F. All three angles in each triangle add up to 180° .
- G. All three sides in each triangle are measured in inches.
- H. Corresponding angles in the triangles are equal.
- J. Corresponding sides of the triangles are different lengths.

11. The following data table shows the numbers of electoral votes for selected states in 2008.

2008 Electoral Votes

State	CA	GA	IL	IN	KY	MI	NC	NJ	NY	OH	PA	TX
Votes	55	15	21	11	8	17	15	15	31	20	21	34

Which frequency table shows the data correctly?

- A. 2008 Electoral Votes

Votes	Frequency
1–19	6
20–39	5
40–59	1

- C. 2008 Electoral Votes

Votes	Frequency
1–19	5
20–39	6
40–59	1

- B. 2008 Electoral Votes

Votes	Frequency
1–19	6
20–39	5
40–59	0

- D. 2008 Electoral Votes

Votes	Frequency
1–19	1
20–39	5
40–59	6

12. Marilyn wants to divide $\frac{3}{5}$ by $\frac{2}{9}$.

Which method should she use?

- F. Divide the reciprocal of $\frac{3}{5}$ by $\frac{2}{9}$
- G. Divide $\frac{3}{5}$ by the reciprocal of $\frac{2}{9}$
- H. Multiply $\frac{2}{9}$ by the reciprocal of $\frac{3}{5}$
- J. Multiply the reciprocal of $\frac{2}{9}$ by $\frac{3}{5}$

13. What expression correctly uses the number of each term, n , to produce the terms in the following pattern?

6, 10, 14, 18, ...

- A. $4n$
- B. $6n$
- C. $2n + 4$
- D. $4n + 2$

14. A bag of apples that weighs 8 pounds costs \$2.89.

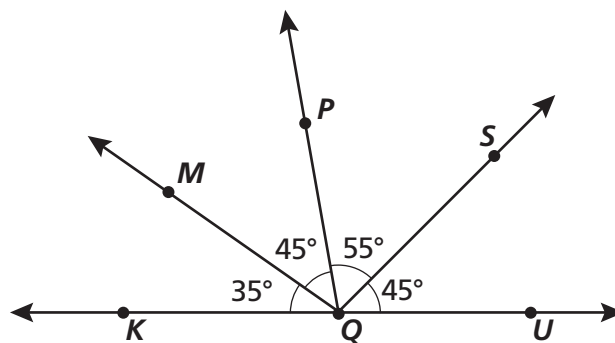
Which is closest to the cost of 3 pounds of apples at the same rate?

- F. \$0.36
- G. \$0.96
- H. \$1.08
- J. \$7.71

15. Which equation represents the Zero Property of Multiplication?

- A. $n + 0 = n$
- B. $n + 0 = 0$
- C. $n \cdot 0 = n$
- D. $n \cdot 0 = 0$

16. Which angle is the complement to $\angle KQM$ in the following diagram?



- F. $\angle MQP$
- G. $\angle PQS$
- H. $\angle PQU$
- J. $\angle UQM$

17. Paul hung tiles at various levels of a building. The pattern in the number of tiles with the increase in level is given in the table below.

Tiles for Each Level

Level Number (l)	Number of Tiles (n)
1	2
2	5
3	8
4	11
5	14

Which of the following describes the relationship between the level (l) and the corresponding number of tiles (n)?

- A. $n = 3l - 1$
- B. $n = 4l - 2$
- C. $n = 4l + 2$
- D. $n = 3l + 1$

18. John drew a circle that had a diameter of 1.95 feet. John's estimate of the area of the circle was 13 square feet.

What mistake did John make in his estimation?

- F. He rounded the diameter and squared it rather than squaring the radius.
- G. He rounded the radius and squared it rather than squaring the diameter.
- H. He multiplied by pi before rounding.
- J. He multiplied by pi before squaring.

19. Wilma made the following three-dimensional object by cutting shapes out of paper.



Which two-dimensional shapes were used to create the three-dimensional object?

- A. 1 circle and 1 rectangle
- B. 1 circle and 2 non-adjacent rectangles
- C. 2 circles and 1 rectangle
- D. 2 circles and 2 non-adjacent rectangles

20. Which equation has the same solution as $x - 12 = 40$?

- F. $\frac{x}{2} = 14$
- G. $x + 12 = -40$
- H. $12 - x = 40$
- J. $\frac{x}{4} = 13$

21. The following table shows the lowest elevations for four states.

Lowest Elevations

State	Elevation (feet)
Arkansas	55
California	-282
Louisiana	-8
Tennessee	178

Samson incorrectly ordered these four elevations from greatest to least:

-282, 178, 55, -8

How should Samson correct the order?

- A. The last number should be -282. It is less than -8.
- B. The third number should be -282. It is greater than -8.
- C. The second number should be -8. It is less than -282.
- D. The first number should be -8. It is greater than -282.
-
22. Which could be the lengths of the sides of a right triangle?
- F. 6, 8, 14
- G. 6, 8, 10
- H. 6, 10, 14
- J. 6, 10, 30

23. Which three-dimensional shape has 6 square faces, 8 vertices, and 12 edges?

- A. Cube
- B. Square pyramid
- C. Hexagonal prism
- D. Octagonal pyramid

24. Wanda wrote the equation given below to find a solution to a calculation problem.

$$5 \times n = 30$$

Which of the following could be the problem that Wanda is solving?

- F. Wanda set her clothes dryer to run for 30 minutes. She later increased the time by another 5 minutes. What is the total time the dryer ran?
- G. Wanda bought entrance tickets to an amusement park for 30 students. What is the total cost of the tickets if each ticket costs \$5?
- H. Wanda is attending a 5-day seminar. The 30 hours of activities for the seminar are equally divided over the 5 days. How many hours of activities are scheduled for each day?
- J. Wanda cut a piece of string measuring 30 centimeters in length. She cut another piece that is 5 times the length of the first piece. What is the length of the second piece of string?

25. Which terms are used to discuss the construction of angles?

- A. Rays and lines
- B. Line segments and rays
- C. Lines and a common endpoint
- D. Rays and a common endpoint

26. The function table below was completed by a student.

x	y
-2	1
-1	-1
0	-3
1	-1
2	1

Which shape best describes the graphed and connected points from the student's function table?

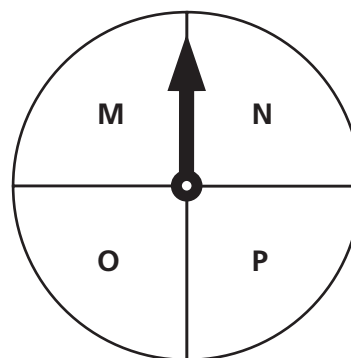
- F. Straight line
- G. U-shape
- H. V-shape
- J. Curve

27. In a seventy-year lifetime, the average human heart beats more than 2.5×10^9 times.

What is this number in standard form?

- A. 2,500,000
- B. 250,000,000
- C. 2,500,000,000
- D. 25,000,000,000

28. The spinner below has four congruent sections.



Brady spun the arrow 100 times on the spinner. The arrow landed on the section labeled "P" 18 times.

How many more times should the arrow have landed on the section labeled "P" to match the theoretical probability?

- F. 2
- G. 4
- H. 7
- J. 25

29. Mr. Smith sells bags of popcorn in a shopping mall. He used the equation below to predict the number of bags of popcorn, p , he would sell in different numbers of days, d .

$$100d = \frac{p}{2}$$

Which of the following is the table Mr. Smith made?

A.

Days (d)	Bags of Popcorn (p)
3	300
5	500
6	600
7	700

C.

Days (d)	Bags of Popcorn (p)
3	600
4	800
5	1000
6	1200

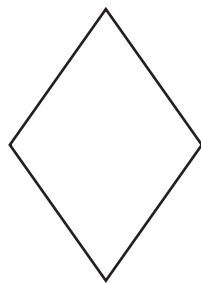
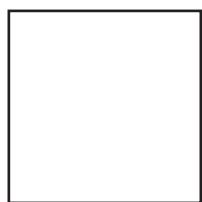
B.

Days (d)	Bags of Popcorn (p)
2	102
3	103
4	104
5	105

D.

Days (d)	Bags of Popcorn (p)
3	600
4	400
5	500
6	1200

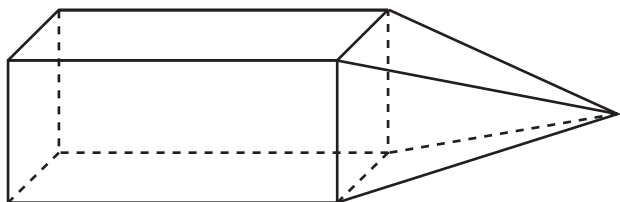
30. Sonia made a conclusion that the following two figures have the same number of lines of symmetry.



Is Sonia's conclusion correct?

- F. Yes, because both the square and the rhombus are congruent
- G. Yes, because the square has 4 lines of symmetry and the rhombus has 4 lines of symmetry
- H. No, because the square has an infinite number of lines of symmetry and the rhombus does not
- J. No, because the square has 4 lines of symmetry and the rhombus has 2 lines of symmetry

31. Study the figure below.



Which pair of three-dimensional solids makes up the figure?

- A. Cube and isosceles triangle
- B. Cube and rectangular pyramid
- C. Rectangular prism and isosceles triangle
- D. Rectangular prism and rectangular pyramid

32. Norman plans to double the side lengths of an image on a coordinate plane.

Which method should Norman use to double the side lengths of the image?

- F. Multiply the coordinates of each vertex by 0.5
- G. Multiply the coordinates of each vertex by 2
- H. Divide the x -coordinate of each vertex by 2
- J. Divide the y -coordinate of each vertex by 0.5

33. Brady recorded the number of pieces in each puzzle he solved, as shown below.

Number of Pieces in
Puzzles Brady Solved

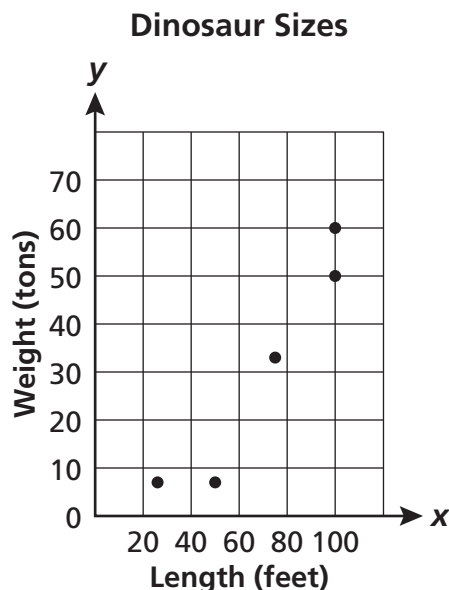
Puzzle Number	Number of Pieces
1	93
2	135
3	85
4	128
5	88
6	94
7	105

The eighth puzzle Brady solved had 23 pieces.

How will the range and mean of the numbers of pieces change if the eighth puzzle is included in the table?

- A. The range will increase and the mean will decrease.
- B. The range will decrease and the mean will remain the same.
- C. The mean will increase and the range will decrease.
- D. The mean will decrease and the range will remain the same.

34. The following scatter plot shows the weights and lengths of some dinosaurs.

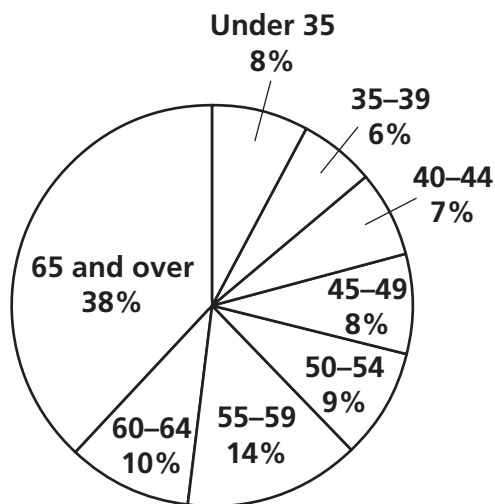


Which statement accurately describes the information in the scatter plot?

- F. The information shows a positive correlation. The weight of a dinosaur tends to increase according to its length.
- G. The information shows a negative correlation. The weight of a dinosaur tends to decrease according to its length.
- H. The information shows no correlation. The weight and length vary according to the type of dinosaur.
- J. The information shows no correlation. The relationship between the weight and length of a dinosaur is uncertain.

35. Gretchen did a report about her grandfather's time in the military service. She read that 25,179,000 military veterans lived in the United States in 2003. She made the circle graph below to show the ages of veterans living in the United States in 2003.

Veterans Living in United States
(2003)



Based upon the circle graph, how many veterans older than 59 were living in the United States in 2003?

- A. 2,517,900
- B. 9,568,020
- C. 12,085,920
- D. 15,610,980

36. A student used the following elevations in a calculation.

- Mt. Everest: 29,035 feet above sea level
- Dead Sea: 1,349 feet below sea level

The student said the distance between the two elevations was 27,686 feet.

Why is the student's calculation incorrect?

- F. The student added a positive 29,035 and a positive 1,349 instead of subtracting a positive 1,349 from a positive 29,035.
- G. The student subtracted a positive 1,349 from a positive 29,035 instead of subtracting a negative 1,349 from a positive 29,035.
- H. The student added a positive 29,035 and a negative 1,349 instead of subtracting a positive 1,349 from a positive 29,035.
- J. The student subtracted a positive 1,349 from a negative 29,035 instead of subtracting a negative 1,349 from a positive 29,035.

37. Jamie bought 22 bottles of orange juice for her club's monthly breakfast. Each bottle holds 14 ounces of juice.

How many 8-ounce cups could she fill with this amount of orange juice?

- A. 26
- B. 38
- C. 39
- D. 44

38. Which question could be correctly answered by solving the following equation?

$$x - 1\frac{2}{3} = 2\frac{3}{4}$$

- F. Simon had $1\frac{2}{3}$ square meters of cloth to make a baby dress. He had $2\frac{3}{4}$ square meters of the cloth left after he made the dress. How many square meters of cloth did Simon use to make the dress?
- G. Simon made a cardboard sign that was $1\frac{2}{3}$ feet long. Then he made a second sign that had a length that was $2\frac{3}{4}$ feet shorter than the first sign. What is the length of the second sign?
- H. Simon has a bottle with $1\frac{2}{3}$ liters of water. He used $2\frac{3}{4}$ liters to make fruit juice. How much water was left in the bottle?
- J. Simon had $2\frac{3}{4}$ cups of flour left after he used $1\frac{2}{3}$ cups of flour to bake a cake. How much flour did Simon have before baking the cake?

39. Which equation demonstrates the Commutative Property of Addition?

- A. $2x + y = y + 2x$
 B. $2x + y = 2x + y$
 C. $2x + y = 2(x + y)$
 D. $2x + y = y + (2 + x)$

40. Bob has a set of 64 cards.

- Each card is one of four colors: green, red, yellow, or blue.
- There are an equal number of cards of each color.
- Each card has a picture of one of four shapes printed on it: sphere, cube, cone, or cylinder.
- There are an equal number of cards with each shape in each color.

Cards

Color	Shape
Green	Sphere
Red	Cube
Yellow	Cone
Blue	Cylinder

What is the probability Bob will randomly pick a blue colored card with a cylinder on it?

- F. $\frac{1}{2}$
 G. $\frac{1}{4}$
 H. $\frac{1}{8}$
 J. $\frac{1}{16}$

41. Ross distributed different numbers of flowers, f , among various groups attending an event, based on the number of people in each group, n . This situation can be expressed by the equation below.

$$f = 2 \cdot n + 2$$

Which of the following tables represents the relationship between f and n ?

A. Flower Distribution

Number of People in a Group (n)	Number of Flowers per Group (f)
3	8
4	10
5	12
6	14

C. Flower Distribution

Number of People in a Group (n)	Number of Flowers per Group (f)
3	4
4	6
5	8
6	10

B. Flower Distribution

Number of People in a Group (n)	Number of Flowers per Group (f)
3	6
4	8
5	10
6	12

D. Flower Distribution

Number of People in a Group (n)	Number of Flowers per Group (f)
3	10
4	12
5	14
6	16

42. Sally predicts that a straight line will result from connecting the plotted points listed in the following function table.

x	y
-1	-1
0	1
1	3

Which statement justifies Sally's prediction?

- F. The difference between each pair of consecutive y -values varies.
- G. The difference between each pair of consecutive x -values varies.
- H. The x -values and the y -values change at constant rates.
- J. The x -values and the y -values change at different rates.

43. Jesse used a scale factor to make a map of his backyard on a page in his notebook. The distance from his back door to a garden fence is 25 feet. On his map the same distance is represented by 1 inch.

What distance on his map represents 10 feet?

- A. 250 inches
- B. 25 inches
- C. 2.5 inches
- D. 0.4 inches

44. The following frequency table shows the numbers of books that a group of students read during the fall.

Books Read During the Fall

Number of Books	Number of Students
0-3	
4-7	
8-11	
12-15	

Based upon the information in the frequency table, what is a reasonable assumption?

- F. The same number of students read 4-7 books as read 8-11 and 12-15 books combined.
- G. More students read 0-3 books than read 8-11 and 12-15 books combined.
- H. Fewer students read 4-7 books than read 12-15 books.
- J. Fewer students read 0-3 books than read 8-11 books.

45. Which percent is equivalent to the fraction $\frac{3}{8}$?

- A. 0.375%
- B. 37.5%
- C. 62.5%
- D. 0.625%

46. A student correctly constructed a 45° angle using a square sheet of paper and a pencil.

Which method did the student use?

- F. Folded the paper along the vertical center and traced the edges of the corner at the fold
- G. Folded the paper along the diagonal and traced the edges of the corner at the fold
- H. Traced the outline of the bottom of the paper
- J. Traced the outline of a corner of the paper

47. Between which two integers is $\sqrt{84}$?

- A. 7 and 8
- B. 8 and 9
- C. 9 and 10
- D. 10 and 11

48. Trisha bought a flower vase that costs \$25 and a rug that costs \$48, not including tax. She received a 5% discount on the cost of the flower vase and a 10% discount on the cost of the rug.

What is the cost for both items that Trisha bought after the discount, not including tax?

- F. \$62.05
- G. \$66.95
- H. \$68.10
- J. \$79.05

49. Which of the following explanations gives a logical argument to demonstrate the denseness of rational numbers?

- A. All points on the number line represent rational numbers.
- B. Between any two rational numbers there is only one rational number.
- C. Between any two rational numbers there are infinitely many rational numbers.
- D. A one-to-one correspondence between the set of rational numbers and the set of integers is impossible.

50. What is the simplified form of the expression $14 - 28 \div 7 + (3 + 2)^2$?

- F. 46
- G. 35
- H. 23
- J. 20

51. Andrea bought 3 bags of potato chips that weighed 17 ounces each and 2 bags that weighed 10 ounces each.

What is the total weight of the potato chips that Andrea bought?

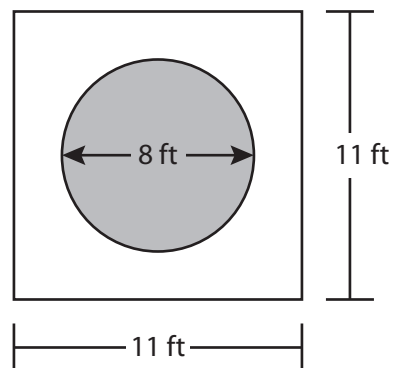
- A. 1 pound 4 ounces
- B. 2 pounds 9 ounces
- C. 3 pounds 3 ounces
- D. 4 pounds 7 ounces

52. Jessica made the statement that the expression $5 - 2n$ and the phrase "five less than twice a number" represent the same idea.

Why is Jessica's statement incorrect?

- F. The expression should be $2n - 5$.
- G. The expression should be $2(n - 5)$.
- H. The phrase should be "twice a number minus five."
- J. The phrase should be "twice the difference of five less than a number."

53. A circular garden is surrounded by a cement path as shown in the following diagram.



Which measurement is closest to the area of the cement path? Use $\pi \approx 3.14$.

- A. 50 square feet
- B. 70 square feet
- C. 80 square feet
- D. 121 square feet

54. Laura received a \$3 discount on a dress that she bought from a store having a sale of 15% off any one item. The equation given below can be used to determine d , the amount of discount, on c , the regular cost of any one item in the store.

$$d = 0.15c$$

What was the regular cost of the dress Laura bought?

- F. \$45
- G. \$20
- H. \$12
- J. \$5

55. Howard correctly reflected a square in Quadrant IV across the y -axis.

Which statement explains one method Howard could have used to correctly determine the coordinates of the vertices of the square?

- A. Howard made the x -coordinates negative and kept the y -coordinates negative.
- B. Howard made the x -coordinates positive and kept the y -coordinates negative.
- C. Howard kept the x -coordinates positive and made the y -coordinates positive.
- D. Howard made the x -coordinates negative and made the y -coordinates positive.

56. A cylindrical oatmeal container has a diameter of 5 inches and a height of 10 inches.

Which formula will find the volume of the oatmeal container?

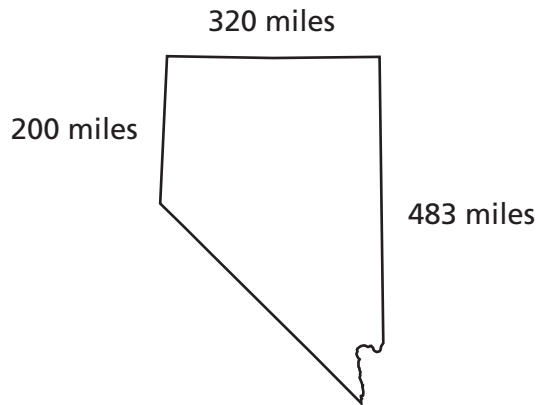
- F. $V = 3.14(5)^2 + 10$
- G. $V = 3.14(5)^2 \cdot 10$
- H. $V = 3.14(2.5)^2 + 10$
- J. $V = 3.14(2.5)^2 \cdot 10$

57. The Wright brothers' airplane, *Flyer*, had a wingspan of 484 inches. Carlos bought a model of the airplane. The model used a scale factor of $\frac{1}{40}$.

What is the wingspan of the model?

- A. $\frac{1}{19,360}$ inches
- B. 12.1 inches
- C. 121 inches
- D. 19,360 inches

58. The following diagram shows that the state of Nevada is shaped somewhat like a trapezoid.



Which measurement is the approximate area of the state of Nevada?

- F. 80,300 square miles
- G. 96,600 square miles
- H. 109,280 square miles
- J. 218,560 square miles

59. The prices, in dollars, of the cars sold by a used car salesperson one week are shown below.

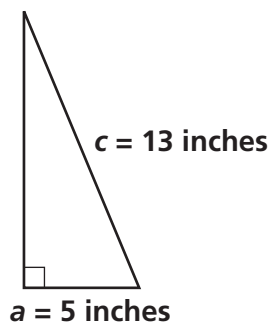
4300, 5400, 3200, 6200, 5400, 5500, 6400

The price of the next car sold by the salesperson was \$14,000.

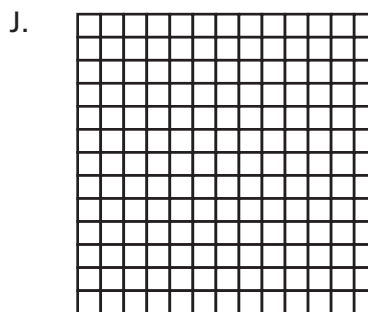
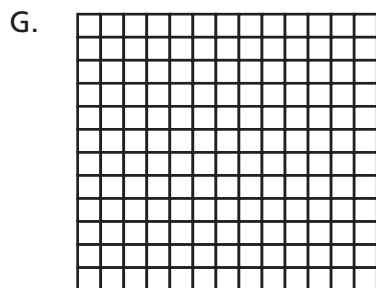
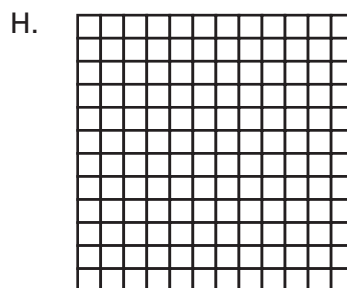
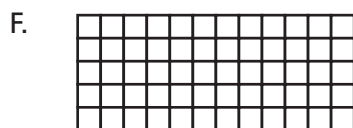
Which measure will have the greatest change when the price of the last car sold is included in the list?

- A. Mean
- B. Median
- C. Mode
- D. Range

60. A right triangle with one leg length of 5 inches and hypotenuse length of 13 inches is shown below.



Which array of square inches drawn along the missing leg correctly illustrates the Pythagorean Theorem?



BE SURE YOU HAVE MARKED ALL YOUR ANSWERS
ON THE ANSWER DOCUMENT.



Grade 7 Math Practice Test 2 Key

Item Sequence	Answer Key	Competency	Objective	Framework DOK	Item PLD	Item DOK
1	C	1	a	1	Proficient	1
2	G	1	c	1	Basic	1
3	A	1	f	1	Proficient	1
4	F	2	a	1	Proficient	2
5	C	1	b	2	Proficient	1
6	J	1	h	2	Proficient	1
7	B	5	a	2	Advanced	3
8	J	2	a	2	Basic	1
9	D	2	c	2	Advanced	3
10	J	3	c	2	Proficient	2
11	A	5	c	2	Basic	1
12	J	1	b	2	Advanced	3
13	D	2	a	2	Basic	2
14	H	1	g	1	Proficient	1
15	D	2	e	1	Basic	1
16	G	3	f	2	Proficient	2
17	A	2	a	1	Proficient	2
18	F	4	b	2	Advanced	3
19	C	3	b	2	Proficient	2
20	J	2	b	2	Proficient	2
21	A	1	h	2	Advanced	3
22	G	3	e	2	Proficient	1
23	A	3	a	1	Basic	1
24	H	2	c	2	Proficient	2
25	D	3	f	2	Basic	1
26	H	2	f	2	Proficient	2
27	C	1	e	1	Proficient	1
28	H	5	d	2	Proficient	2
29	C	2	d	1	Proficient	1
30	J	3	c	2	Proficient	2
31	D	3	a	1	Basic	1
32	G	3	d	2	Advanced	3
33	A	5	b	2	Proficient	2
34	F	5	c	2	Proficient	2
35	C	5	a	2	Proficient	2
36	G	1	h	2	Advanced	3
37	B	4	a	2	Proficient	2
38	J	2	c	2	Proficient	2
39	A	2	e	1	Basic	1
40	J	5	d	2	Proficient	2
41	A	2	d	1	Proficient	1
42	H	2	f	2	Advanced	3
43	D	4	d	2	Proficient	2
44	G	5	c	2	Proficient	2
45	B	1	c	1	Basic	1
46	G	3	f	2	Basic	1
47	C	1	d	2	Proficient	2
48	G	1	g	1	Proficient	1
49	C	1	i	3	Proficient	2
50	G	1	a	1	Proficient	1
51	D	4	a	2	Proficient	2
52	F	2	c	2	Advanced	3
53	B	4	b	2	Proficient	2
54	G	1	g	1	Proficient	1
55	A	3	d	2	Advanced	3
56	J	4	c	3	Proficient	2
57	B	4	d	2	Proficient	2
58	H	4	b	2	Proficient	2
59	D	5	b	2	Proficient	2
60	H	3	e	2	Proficient	2