Student Name _____

**Mississippi Curriculum Test, Second Edition**
MCT2

GRADE
**6**
PRACTICE
TEST BOOK

# MISSISSIPPI

APRIL
2010

# 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. Azariah measured three line segments. One segment was $3\frac{5}{8}$ inches long.

   The second segment was $3\frac{7}{16}$ inches long. The third segment was $3\frac{1}{2}$ inches long.

   Which of the following correctly compares her 3 measurements?

   A. $3\frac{1}{2} < 3\frac{5}{8} < 3\frac{7}{16}$

   B. $3\frac{1}{2} < 3\frac{7}{16} < 3\frac{5}{8}$

   C. $3\frac{5}{8} < 3\frac{7}{16} < 3\frac{1}{2}$

   D. $3\frac{7}{16} < 3\frac{1}{2} < 3\frac{5}{8}$

2. Mrs. Kramer's class is collecting money to buy fruit baskets for nursing home residents. They need at least $120 to buy the fruit baskets. So far they have collected $85.

   Which inequality shows how much money (c) the class still needs to collect?

   F. $120 \geq 85 + c$

   G. $c \geq 120 + 85$

   H. $85 \geq 120 + c$

   J. $85 + c \geq 120$

3. A long distance runner was $14\frac{3}{4}$ miles north of her school gymnasium. At that point, she realized she needed more water. She then turned back and ran to the store she had passed $2\frac{1}{5}$ miles earlier.

   Which of the following is the best estimate of the distance from the gymnasium to the store?

   A. 11 miles

   B. 13 miles

   C. 15 miles

   D. 16 miles

4. Cecil was given the rule: multiply a number (p) by four and add three to find the value of q.

   | p | q |
   |---|---|
   | 9 | 39 |
   | 5 | 23 |
   | 1 | 7 |
   | −3 | ? |

   Which answer will complete the function table shown?

   F. $-12$

   G. $-9$

   H. $0$

   J. $8$

Page 3

GO ON

**5.** The graph below represents the number of cups Wendy collected over a period of time.

WENDY'S CUP COLLECTION
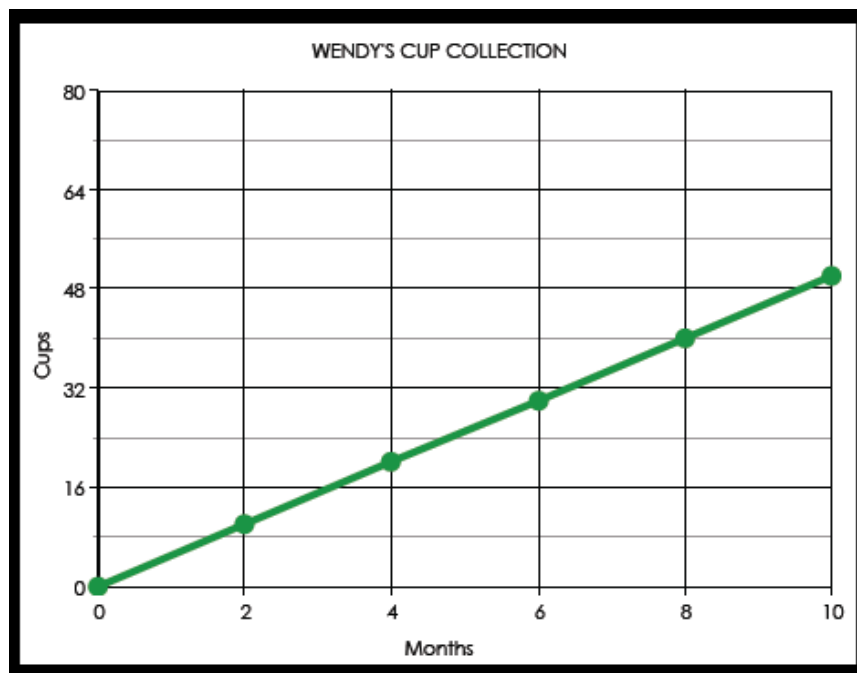


Which statement is a correct interpretation of the graph?

A. Wendy's cup collection is increasing over time.

B. Wendy's cup collection is decreasing over time.

C. Wendy's cup collection remains the same size over time.

D. Wendy's cup collection sometimes increases and sometimes decreases.

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**6.** If $2x - 4 = 12$, which of the following equations is true?

F. $x = 16 + 2$

G. $x = 16 - 2$

H. $x = 16 \times 2$

J. $x = 16 \div 2$

GO ON

7. Four students put their spelling test scores in a stem-and-leaf plot.

**Missy's Spelling Test Scores**

| 8 | 4 6 9 |
|---|-------|
| 9 | 3 4 |
| 10 | 0 0 |

**David's Spelling Test Scores**

| 8 | 0 4 8 |
|---|-------|
| 9 | 2 6 8 |
| 10 | 0 |

**Jarrod's Spelling Test Scores**

| 7 | 9 |
|---|-------|
| 8 | 9 9 |
| 9 | 6 7 7 |
| 10 | 0 |

**Farrah's Spelling Test Scores**

| 7 | 9 |
|---|-------|
| 8 | 3 8 9 |
| 9 | 5 |
| 10 | 0 0 |

Which student has the greatest median test scores?

A. Missy

B. David

C. Jarrod

D. Farrah

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8. The length of a piece of rope is $19\frac{1}{2}$ feet. Molly needs to cut the rope into pieces $2\frac{1}{6}$ feet long.

How many pieces can she make?

F.  9

G.  12

H.  $17\frac{1}{3}$

J.  $42\frac{1}{4}$

GO ON

9. The frequency table below represents the number of hours of television watched per week by a group of 7$^{th}$ grade students.

| Number of Hours of TV Watching per Week | | | | |
|---|---|---|---|---|
| 5 | 13 | 22 | 17 | 10 |
| 25 | 21 | 15 | 20 | 17 |
| 3 | 21 | 17 | 18 | 6 |
| 14 | 19 | 10 | 8 | 30 |
| 21 | 14 | 25 | 32 | 31 |

According to the data, how many students watch TV at least 8 hours but fewer than 20 hours in one week?

A.   5

B.   8

C.  10

D.  12

10.  How many more vertices does Figure X have than Figure Y?
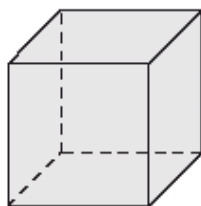


**Figure X**          **Figure Y**

F.   6

G.   4

H.   2

J.   1

GO ON
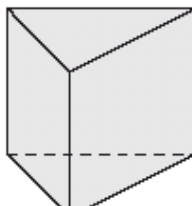
**11.** Jonzie drew a quadrilateral having the following characteristics –

- opposite sides are parallel
- opposite sides are congruent
- adjacent sides are not congruent
- all angles are 90 degrees
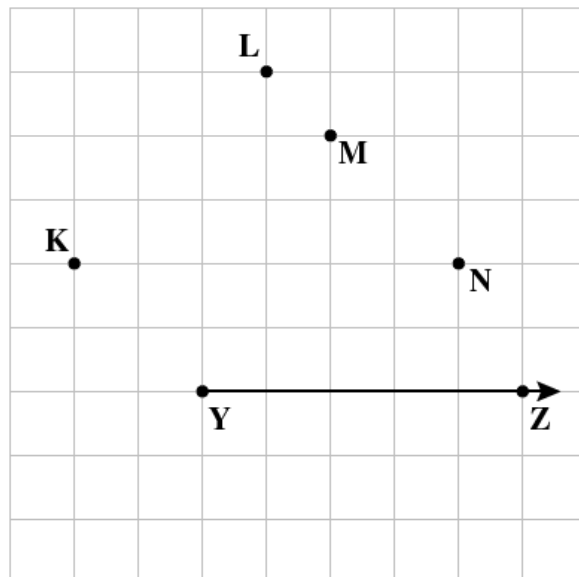
**What type of quadrilateral did Jonzie draw?**

A. Trapezoid

B. Rhombus

C. Rectangle

D. Square

**12.** In 2001, gas cost $1.85 per gallon. In 2008, the price was 220% higher than in 2001.

**What was the cost of gas per gallon in 2008?**

F. $ 0.407 per gallon

G. $ 4.05 per gallon

H. $ 4.07 per gallon

J. $40.50 per gallon

**13.** Jessica connected points Y and Z to make one side of an angle.



**Which other point should she connect to point Y to make an angle closest to 85°?**

A. Point K

B. Point L

C. Point M

D. Point N

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GO ON

**14.** This graph below illustrates a translation of rectangle ABCD to rectangle A'B'C'D'.
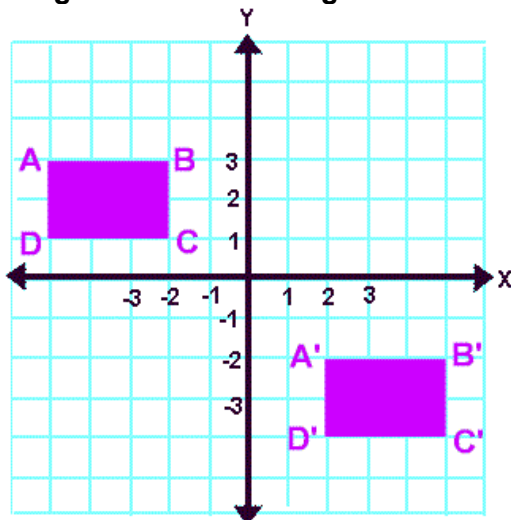


Which of the following explains what happens to ■ ABCD?

F. Each vertex is translated +3 units in the x-direction and –2 units in the y-direction.

G. Each vertex is translated –4 units in the x-direction and +5 units in the y-direction.

H. Each vertex is translated +7 units in the x-direction and –5 units in the y-direction.

J. Each vertex is translated –7 units in the x-direction and +5 units in the y-direction.

**15.** The baseball stadium seats 7,416 people. In July, the team played fourteen games in the stadium to a sold out crowd.

How many people were in attendance during the month of July?

A.  7,416

B.  29,664

C.  37,070

D.  103,824

**16.** The diameter of a circle is 14 inches.

Which inequality identifies the circumference?

F.  $19 < C < 25$

G.  $40 < C < 46$

H.  $50 < C < 59$

J.  $150 < C < 155$

**17.** The graph below represents the amount of money Kelly is saving per week for a new pair of shoes.
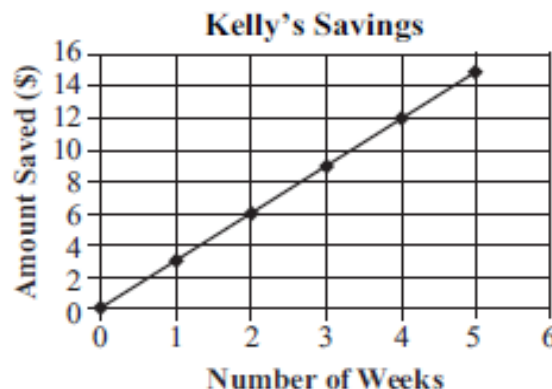


If Kelly continues to save money at this rate, how much will she have by the end of the seventeenth week?

A.  $15

B.  $22

C.  $45

D.  $51

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GO ON

18. **Which of the following is <u>not</u> true when computing the absolute value of a number?**

    F.   The absolute value of a number is the distance between zero and that number on the real number line.

    G.   The absolute value of any number, positive or negative is always positive.

    H.   The absolute value of zero is always zero.

    J.   The absolute value of any real number is the opposite of that number.

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19. **You may use a ruler to help answer the question.**

**Below is the scale drawing of an elementary school playground.**



Scale
1 cm = 10 m

**Which is closest to the perimeter of the actual playground in meters?**

    A.   220 m

    B.   225 m

    C.   240 m

    D.   440 m

GO ON

**20.** A software company employs 450 workers. It plans to increase its workforce by 8 employees per month until it has doubled in size.

Which equation can be used to determine *m*, the number of months it will take for the company's workforce to double in size?

F.   $8m + 450\ m = 900$

G.   $2m + 450 = 900$

H.   $2(8m + 450) = 900$

J.   $8m + 450 = 900$

**21.** The figure below is an illustration of a circular piece of sliced fruit.



4 cm
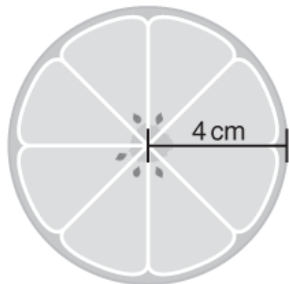
Which expression could be used to find the approximate circumference of the slice of fruit shown above?

A.   $\pi(4)$

B.   $\pi(4^2)$

C.   $2(\pi)(8)$

D.   $2(\pi)(4)$

**22.** A toy company packages balls in a cube-shaped box. The length of each side of the box is 4.9 inches.

Which of the following is a reasonable estimate for the volume of box?

F.   $150\ \text{in}^3$

G.   $125\ \text{in}^3$
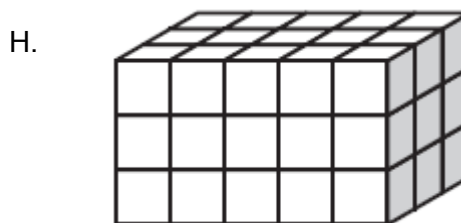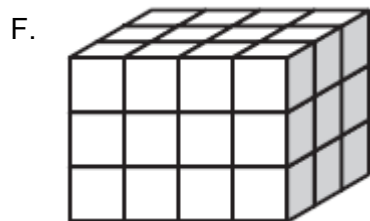
H.   $100\ \text{in}^3$

J.   $15\ \text{in}^3$

**23.** The height of a parallelogram is three times the base.

If the base measures $5\dfrac{3}{4}$ feet, which of the following is closest to the area of the parallelogram?
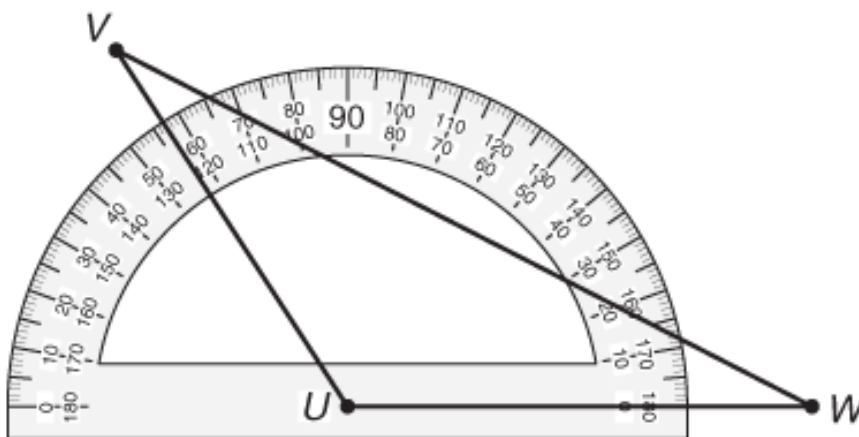
A.   17 square feet

B.   46 square feet

C.   99 square feet

D. 180 square feet

GO ON

**24.** The models below are made of cubes which have 1 cm edges.
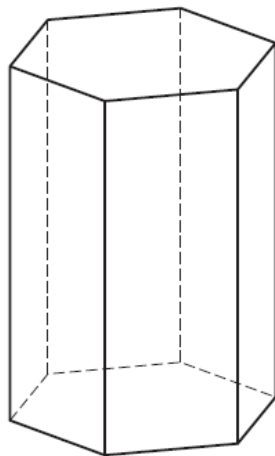
Which of the models has a volume of 45 cm³?

F.

H.

G.

J

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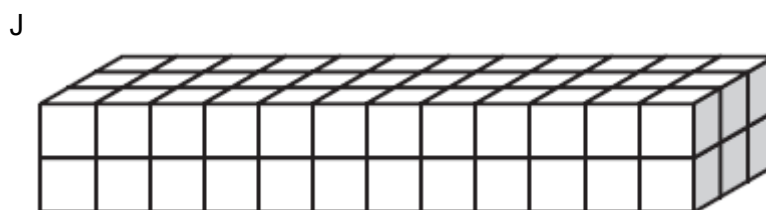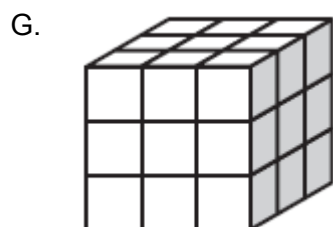
**25.** Triangle VUW is shown below.

What is the measure of angle VUW to the nearest degree?

A. 57°

B. 63°

C. 123°

D. 137°

GO ON

**26.** Which statement about the prism below is true?



F. The number of faces is more than the number of vertices.

G. The number of edges is less than the number of vertices.

H. The number of vertices is more than the number of faces.

J. The number of vertices is more than the number of edges.

**27.** In the figure below, points *A*, *G*, and *D* lie on the same line.
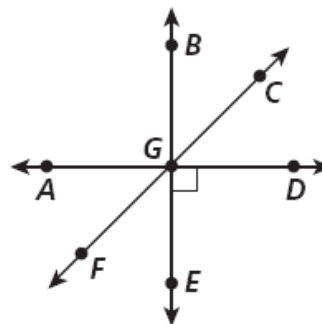


If $\angle AGD$ is classified as a straight angle, which angle would be classified as an obtuse angle?

A. $\angle AGE$

B. $\angle DGF$

C. $\angle CGD$

D. $\angle BGD$

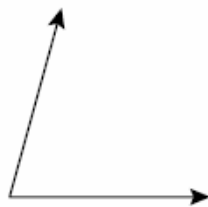**28.** There are 5 children in Isabella's family including Isabella. Their ages are listed below.

**1, 4, 4, 11, 15**

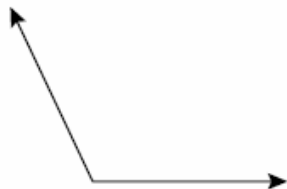Which of the following measures will <u>not</u> change when the children are all 5 years older?

F. Mean

G. Median

H. Mode

J. Range

GO ON

**29.** Which of the following angles measures closest to 170°?
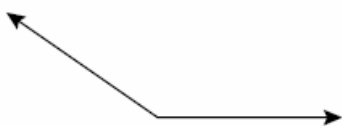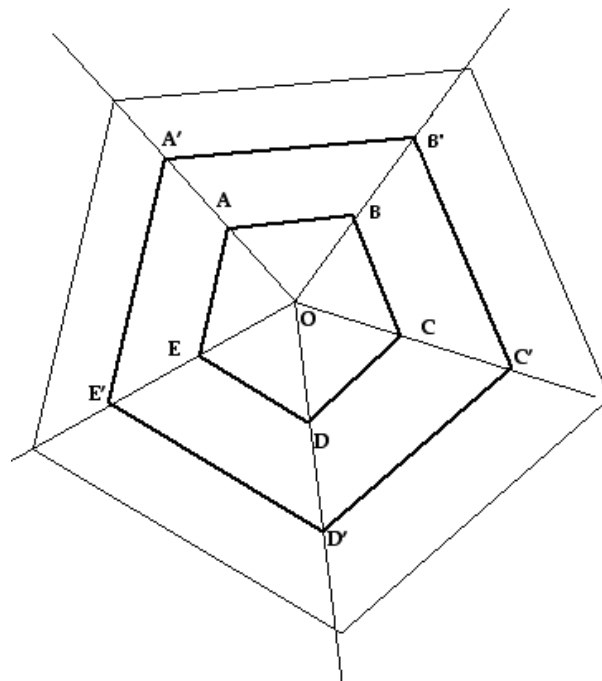
A.

B.

C.

D.

**30.** Look at the figure below.



**Which statement about the figure is <u>not</u> true?**

F.   $A'B'C'D'E'$ is increased to $ABCDE$ by a scale factor of 200%.

G.   $ABCDE$ is a reduction of $A'B'C'D'E'$ by a scale factor of $\dfrac{1}{2}$ .

H.   $O'B'$ is twice $OB$, and $E'D'$ is twice $ED$.

J.   $AB$ is a reduction of $A'B'$ by a scale factor 50%.

GO ON

**31.** Jason's scores on four math quizzes are 79, 80, 85, and 100. Sean's scores on three math quizzes are 83, 85, and 80.

What score does Sean need on his fourth math quiz to give him the same average as Jason?

A. 100

B. 96

C. 94

D. 92

**32.** A video store owner is placing DVDs on shelves, considering the following conditions.
- **The owner has more than 20 DVDs.**
- **The owner can put 12 DVDs on each shelf with no DVDs left over.**
- **The owner can also put 20 DVDs on each shelf with no DVDs left over.**

Which is the least number of DVDs that the owner could have?

F. 36

G. 40

H. 60

J. 240

**33.** During a classroom discussion about rational numbers, Alvin was asked to find the product of 7 and $\frac{1}{4}$.

What estimation strategy could be used to locate the product on a number line?

A. The product will be greater than half of seven, and located between 3 and 4 on a number line.

B. The product will be less than 1, and located between 0 and 1 on a number line.

C. The product will be less than half of seven, and located between 1 and 2 on a number line.

D. The product will be equal to the decimal equivalent of $\frac{1}{4}$, and located between 0 and 1 on a number line.

**34.** Andrew washed and waxed his car over the weekend. He used $\frac{5}{8}$ cup of detergent and $\frac{1}{4}$ cup of wax.

Which expression represents the total amount of detergent and wax Andrew used to clean his car?

F. 625 + 25

G. 6.25 + 2.5

H. 0.625 + 0.25

J. 0.0625 + 0.025

GO ON

35. Once a week, Alice runs along a path around City Park. For 4 weeks, she recorded her running times. Alice plotted the data on the graph below.
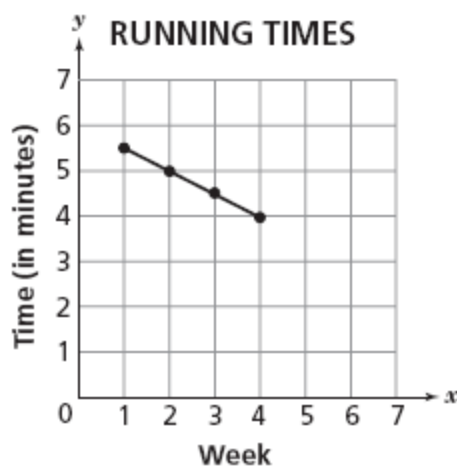


If the pattern in the graph continues, how many minutes will it take Alice to run around the park in Week 7?

A. $2\dfrac{1}{2}$

B. 3

C. $3\dfrac{1}{2}$

D. 7

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36. Use the chart for the price per pound of meat's at Sarah's Delicatessen.

| Delicatessen Prices | |
|---|---|
| Item | Price per Pound |
| Cheese | $3.80 |
| Turkey | $3.84 |
| Roast beef | $6.46 |
| Pastrami | $6.43 |
| Bologna | $3.20 |

The Gary family bought 6 wheat rolls at $0.85 each and $\dfrac{3}{4}$ pound of turkey. They made 6 sandwiches.

Which of the following is closest to the cost of each sandwich?

F. $3.73

G. $2.88

H. $1.33

J. $0.85

GO ON

**37.** Which pair of equations demonstrates that multiplication and division are inverse operations?

A. $a \times b = c \rightarrow b \times a = c$

B. $a \times b = c \rightarrow c \times b = a$

C. $a \times b = c \rightarrow \dfrac{b}{a} = c$

D. $a \times b = c \rightarrow \dfrac{c}{b} = a$

**38.** Which equation was used to complete the function table below?

| a | b |
|---|---|
| 1 | 2 |
| 3 | 8 |
| 5 | 14 |
| 10 | 29 |

F. $3a + 1 = b$

G. $3a - 1 = b$

H. $2a + 4 = b$

J. $2a + 6 = b$

**39.** Tabatha is putting party favors into gift bags. There are 16 gift bags per package and 24 party favors per package.

What is the LEAST number of packages of each item that Tabatha must buy in order to have the same number of party favors and gift bags?

A. 2 packages of gift bags and 3 packages of party favors.

B. 3 packages of gift bags and 2 packages of party favors.

C. 32 packages of gift bags and 32 packages of party favors.

D. 48 packages of gift bags and 48 packages of party favors.

**40.** Robert's mother bought a house for $79,500. She saved a 15% down payment. Robert gave her an additional 10% for the down payment.

How much did Robert's mother have to borrow from the bank to purchase the house?
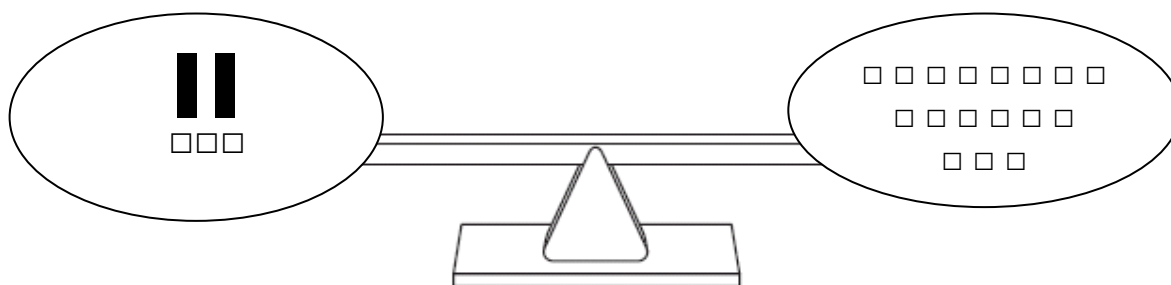
F. $59,625

G. $64,500

H. $69,500

J. $71,550

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GO ON

**41.** A local men's suit manufacturer had 2,742 square meters ($m^2$) of fabric to make identical suits, all of the same size.

If each suit used 7.4 square meters ($m^2$) of fabric, how many suits could be made?

- A.   37
- B.   369
- C.   370
- D.   371

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**42.** The picture below shows a scale that is balanced.



If ▌ = $x$ and □ = +1, what is the value of $5x - 3$?

- F.   2
- G.   7
- H.   32
- J.   35

GO ON

**43. Which of the following expressions is another way to represent 56 ÷ 8?**

    A.  56 + 8 + 8 + 8 + 8 + 8 + 8 + 8

    B.  56 − 8 − 8 − 8 − 8 − 8 − 8 − 8

    C.  56 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7

    D.  56 − 8 − 7 − 8 − 7 − 8 − 7 − 8 − 7

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**44. Which of the following expressions would be useful for calculating 195 × 6 + 195 × 4?**

    F.  195 + (6 + 4)

    G.  195 × (6 − 4)

    H.  195 + (6 × 4)

    J.  195 × (6 + 4)

GO ON

**45.** The following function table was used to plot the line shown in the grid.

| x | y |
|---|---|
| −1 | 0 |
| 1 | 2 |
| 3 | 4 |
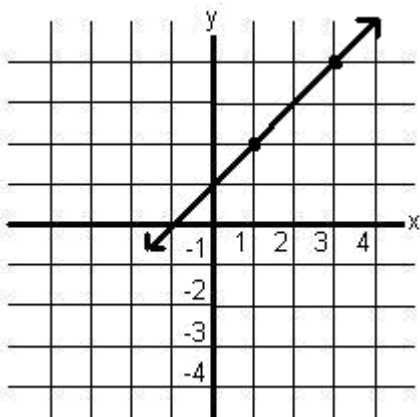


**Which equation represents the same function?**

A.  $y = x + 1$

B.  $y = 2x$

C.  $y = x - 1$

D.  $y = x \div 2$

**46.** Which of the following demonstrates the distributive property of multiplication over addition?

F.  $7(2a - 6) = 9a - 13$

G.  $6(4) \div 6(a) = 6(4 \div a)$
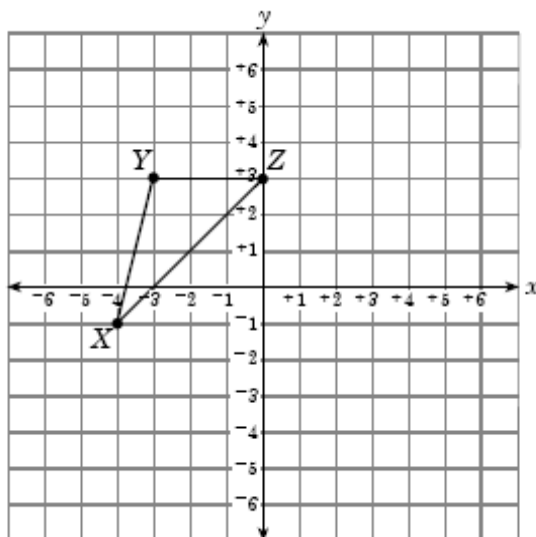
H.  $2(3 + a) = 6 \times 2(a)$

J.  $4(2a+3) = 8a+12$

**47.** Barbara created the input-output table shown below.

| Input | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Output | 17 | 19 | 21 | 23 | 25 | 27 | 29 |

**Which rule makes the values of Barbara's table true?**

A.  Input + 16 = Output

B.  Input × 9.5 = Output

C.  (Input × 2) + 12 = Output

D.  (Input × 2) + 15 = Output

GO ON

**48.** △**XYZ** is shown below.



If the coordinates of **Z′** are (3, 1), which statement describes the transformation of point **Z**?

F.   Point **Z** was translated 2 units to the right and 3 units down.

G.   Point **Z** was translated 3 units to the right and 2 units down.

H.   Point **Z** was translated 2 units to the left and 3 units up.

J.   Point **Z** was translated 3 units to the left and 2 units up.

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**49.** **What is the area of a quadrilateral that is formed from two right triangles with bases of 12 inches and heights of 6 inches?**

A.   18 square inches

B.   36 square inches

C.   72 square inches

D.   144 square inches

GO ON

**50.**  **Juanita performed a 50% dilation on figure KLMN as shown below.**

K _____ L

M _____ N

K' _____ L'

M' _____ N'
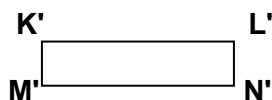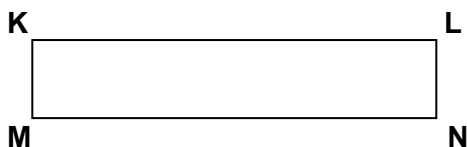
**What is the relationship between the length of K'L' and KL?**

F.   The length of K'L' is half the length of KL.

G.   The length of K'L' is twice the length of KL.

H.   The length of K'L' is the same as the length of KL.

J.   The length of K'L' cannot be compared to the length of KL.

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**51.  Six squares can be arranged into a figure that can be folded into a cube as shown below.**



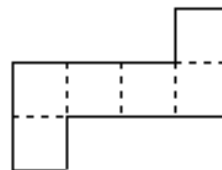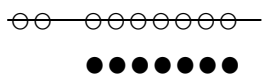**Which of the figures below is <u>not</u> a net of a cube?**
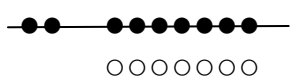
A.



C.



B.



D.

**GO ON**
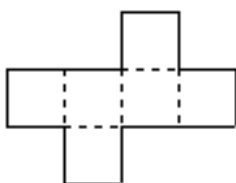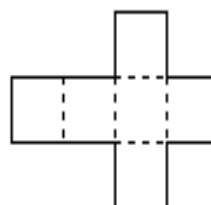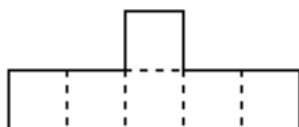
**52.** Timothy has a fish tank. He wants to know how much water it will take to fill it to $\frac{7}{8}$ of its capacity. He pours 20 quarts of water into the tank and realizes that it is $\frac{1}{8}$ full. How many gallons does he still need?

F. $17\frac{1}{2}$ gallons

G. $26\frac{1}{4}$ gallons

H. 30 gallons

J. 35 gallons

**53.** Which model shows the difference of 2 – 9, when ● = –1 and ○ = 1?

A. 

B. 

C. 

D. 

**54.** The high temperatures for Denver during a two week period for the month of December are represented in a stem-and-leaf plot below.

| HIGH TEMPERATURES | |
| --- | --- |
| **Stem** | **Leaf** |
| 1 | 0, 1, 2, 2 |
| 2 | 5, 6, 7 |
| 3 | 4, 7, 7, 9 |
| 4 | 0, 1 |

**What does the second line of the data represent?**

F. The high temperatures of 5°, 6°, and 7° that occurred during December.

G. The high temperatures of 25°, 26°, and 27° occurred during December.

H. The high temperatures of 34°, 11°, and 12° that occurred during week 3 of December.

J. The high temperatures of 5°, 6°, and 7° that occurred twice during December.

**55. Below is a graph of lake depths.**



Lake Depths
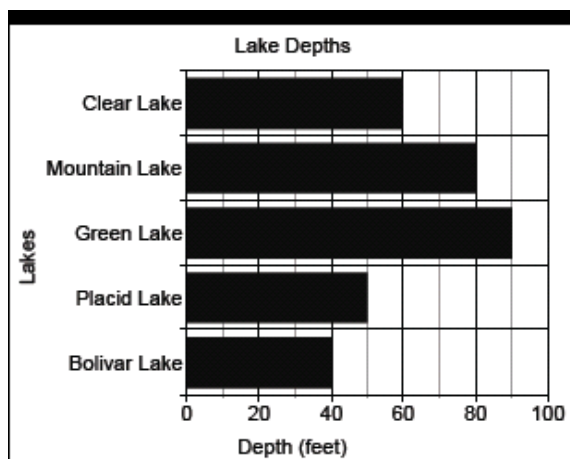
If the graph is changed to include Mirror Lake with a depth of 60 feet, which two values below will **not** change?

A.   Mean and Mode

B.   Mean and Range

C.   Mode and Median

D.   Range and Median

---

**56.   Look at the stacks of plastic cups below to answer the question.**



10 cm — Stack 1 — 2 cups
14 cm — Stack 2 — 4 cups
18 cm — Stack 3 — 6 cups
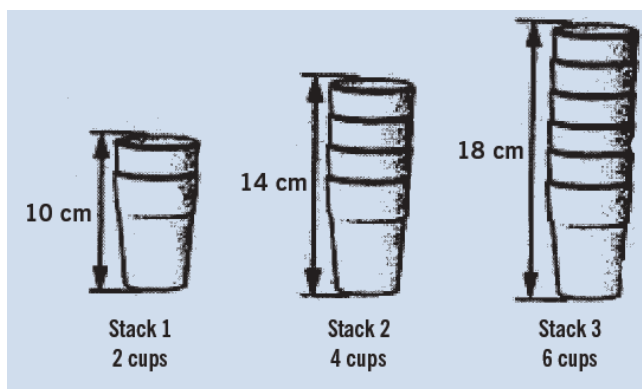
Which of the following expressions can be used to determine the height of a stack of 8 plastic cups?

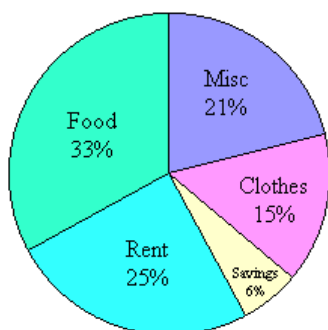F.   6x + 2

G.   2x + 6

H.   2x + 4

J.   4x + 2

GO ON

**57.** Which of the following equations is modeled by the counters shown below, if the shaded circles represent negative and the unshaded circles represent positive?
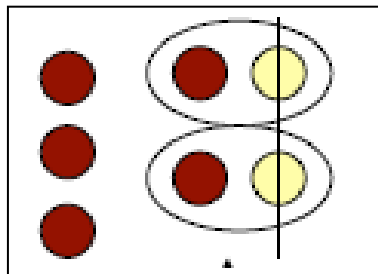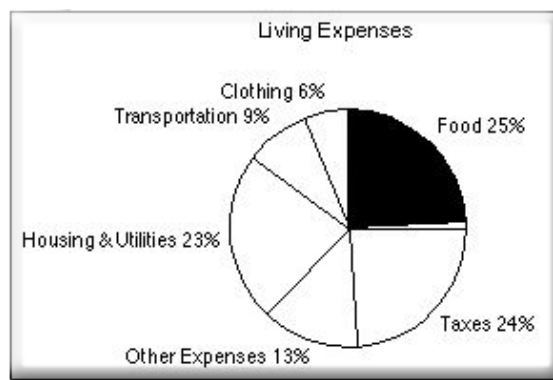


A. $3 - 8 = -5$

B. $-3 - 2 = -5$

C. $1 - (-4) = 5$

D. $3 - (-2) = 5$

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**58.** The Milton Family and the Reynolds Family each earn $84,000 a year.
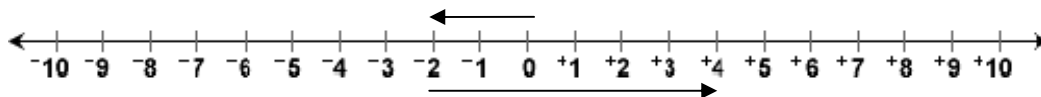
**Milton Family Budget**

**Reynolds Family Budget**



How much more of the Milton Family income is spent on clothing than the Reynolds Family?

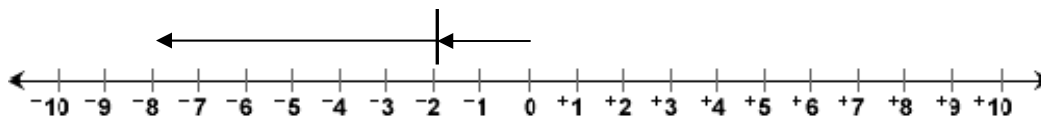F. $5,040

G. $7,560

H. $12,600

J. $17,640

GO ON

**59.** Which of the following number lines represents the difference between the pair of integers shown below?

$$(-2) - (-6) = ?$$

A.



B.



C.



D.

GO ON
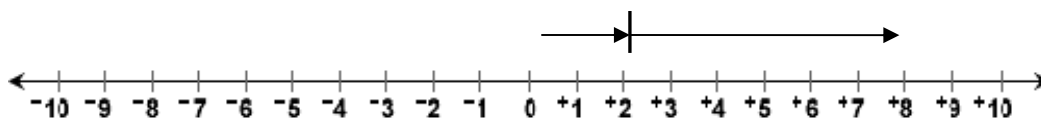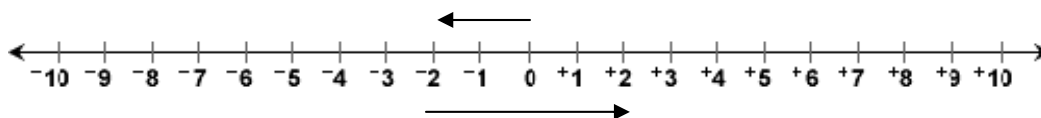
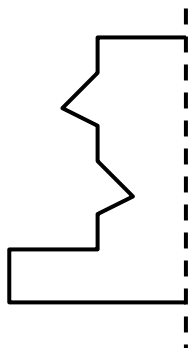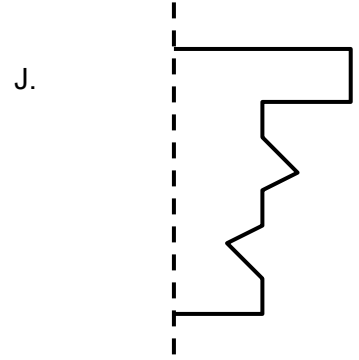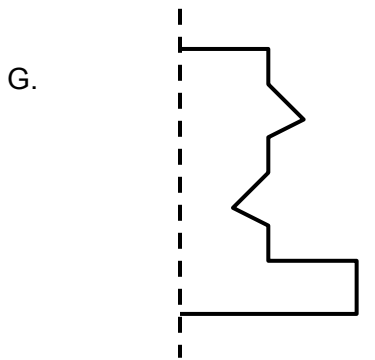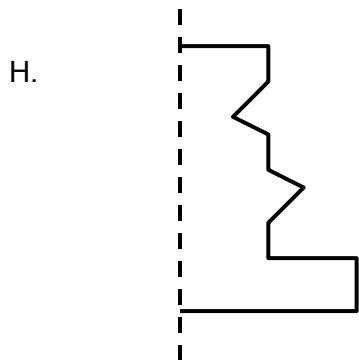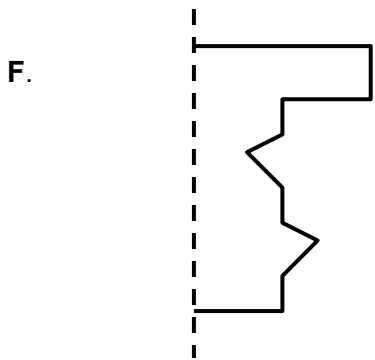**60.** The figure below is one-half of a symmetric figure with its line of symmetry.



**Which of the following is the other half of the figure?**

**F.**



**H.**



**G.**



**J.**



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

STOP

**Grade 6 MATH Practice Test 3 Key**

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