Louisiana Believes

Grade 6 Math Practice Test

2013-2014

For further information, contact:
Louisiana Department of Education's Help Desk
1-877-453-2721
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http://www.louisianabelieves.com/resources/contact-us

*i*LEAP Practice Test—Grade 6 Math

Test Administrator Instructions

★   This document contains a Practice Test that shows what each part, or session, of an actual grade 6 math assessment is like.

The Practice Test may be used at home or at school for students to become familiar with the *i*LEAP test they will take in spring 2014. It may help students feel more relaxed when they take the actual test.

★   The Assessment Structure provides information on the overall design of the actual test. The Assessment Structure and example items can be found on the Louisiana Department of Education's website.

http://www.louisianabelieves.com/resources/library/assessment-guidance-2013-2014

The mathematics test has three sessions to be taken separately:

- Session 1 (pages 3 to 16) includes 30 multiple-choice questions—a calculator may not be used.

- Session 2 (pages 18 to 34) includes 30 multiple-choice questions—a calculator may be used.

- Session 3 (pages 36 and 37) includes 2 constructed-response questions—a calculator may be used.

★   A Mathematics Reference Sheet, which students may use for all sessions, is located on page 40.

★   Students respond to multiple-choice items using the Answer Sheets on pages 38 and 39 and constructed-response items using pages 36 and 37 of Session 3.

★   The Answer Keys and Scoring Rubrics, used to score student responses, are located on pages 41 to 44.

When printing the PDF files for the three Math Sessions, be sure to set the *Page Scaling* drop-down menu on the Print screen to None, No Scaling, or Actual Size depending on the printer you are using. Otherwise, measurement items may not be the correct size, which may impact student responses.

DEPARTMENT of EDUCATION
louisiana Believes

Math—Sessions 1, 2, and 3
GENERAL INSTRUCTIONS

The Math test has three sessions, two with multiple-choice questions and one with constructed-response questions. You may **not** use a calculator for session 1, but you may use a calculator for sessions 2 and 3.

Session 1—Math (No Calculator)

Write your answers for questions 1 through 30 in the spaces provided on page 38, session 1 answer sheet. Write only one answer for each question. You may work problems in your test booklet or on scratch paper, but you must mark your answer on your answer sheet. You may review your work in this session, but do not work on any other session.

You may NOT use a calculator for this session.

1. Add

   8.64 + 7.098 + 10.9901

   A. 15.5281
   B. 16.84701
   C. 26.7281
   D. 27.611

2. The change, in yards, in a football team's position on the field for each of their last four plays is shown below.

   $$-4, 7, -7, 0$$

   Which list correctly compares the changes, in yards, in the football team's position on the field?

   A. $-7 < -4 < 0 < 7$
   B. $-4 < -7 < 0 < 7$
   C. $0 < -7 < -4 < 7$
   D. $0 < -4 < -7 < 7$

3. **Use the equation below to answer the question.**

$$6x + 3 = 3(2x + 3)$$

Which statement correctly explains whether the equation is true or not?

A. It is true because $6x$ equals $3 \times 2x$.

B. It is not true because 3×3 does not equal 3.

C. It is true because the terms on the left are multiples of 3.

D. It is not true because all the x values should be on the same side of the equation.

4. Sheila put a new lightbulb into a light socket. The lightbulb was on for 24 hours a day and burned out after 1,806 hours. Sheila did the work below to determine how many days the lightbulb lasted.

$$
\begin{array}{r}
75 \\
24\,\overline{\smash)1{,}806} \\
-168\downarrow \\
\hline
126 \\
-120 \\
\hline
6
\end{array}
$$

Sheila needs to finish the calculation to find how long, in days, the lightbulb lasted. Which statement about Sheila's calculations is true?

A. Sheila completed the calculation by subtracting 24 − 6 to get 18 and found that the lightbulb lasted 75.18 days.

B. Sheila completed the calculation by dividing 6 ÷ 24 to get 0.25 and found that the lightbulb lasted 75.25 days.

C. Sheila completed the calculation by dividing 24 ÷ 6 to get 4 and found that the lightbulb lasted 75.4 days.

D. Sheila completed the calculation by adding on 0.6 of a day since the remainder is 6 and found that the lightbulb lasted 75.6 days.

Session 1—Math (No Calculator)

5. Multiply.

$$6.23 \times 9.3$$

A. 57.939

B. 74.76

C. 579.39

D. 747.6

6. Philip and Veronica are in band together. He asked her a statistical question. Which question could Philip have asked Veronica?

A. How many instruments do you own?

B. How much did your first instrument cost?

C. How old were you when you started playing an instrument?

D. How long are the songs you practice playing on your instrument?

7. The bottom of a swimming pool is 10 feet below the surface of the water in the pool. The surface of the water is represented by the number 0, and the bottom of the pool is represented by the number –10. The pool's diving board is the same distance above the surface of the water as the bottom of the pool is below the surface of the water. What number represents the location of the diving board?

A. $\dfrac{1}{10}$

B. 0

C. 10

D. 20

Session 1—Math (No Calculator)

8. Alessandro plotted point A on the coordinate grid below.
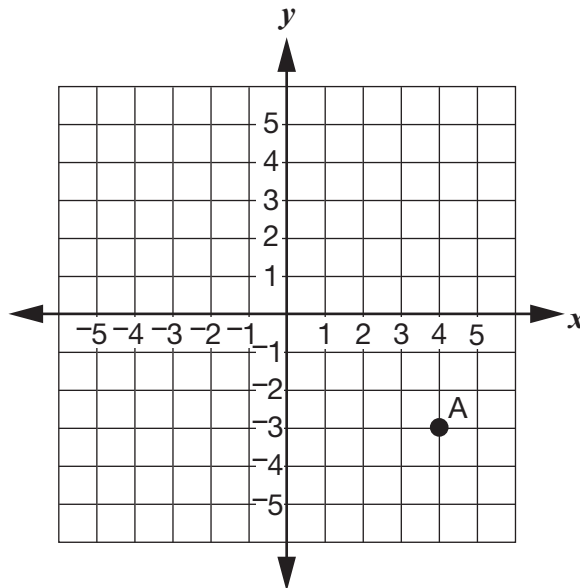
He reflected point A across one of the axes to create point B. Which ordered pair could be the location of point B?

A. $(-3, -4)$

B. $(-4, 3)$

C. $(4, -3)$

D. $(4, 3)$

9. Charlotte invested $100 per year into a business for 3 years. The total value of her investment after 3 years is represented by the algebraic expression below, where x is the growth in value each year.

$$100(x^3 + x^2 + x)$$

What is the total value of her investment when $x = 2$?

A. $600

B. $1200

C. $1400

D. $6400

10. In Xavier's coin collection, $\frac{1}{5}$ of the coins are pennies, $\frac{11}{40}$ of the coins are nickels, and $\frac{1}{4}$ of the coins are dimes. Which list correctly compares these portions of Xavier's coin collection?
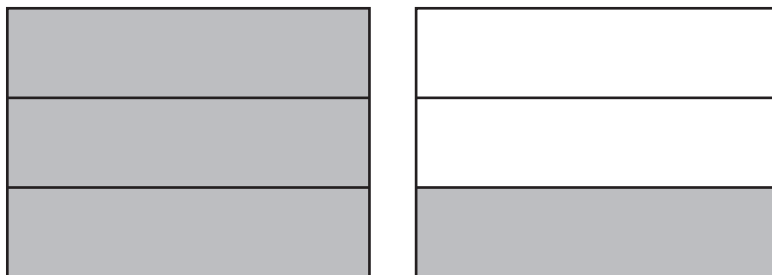
A. $\frac{1}{4} < \frac{1}{5} < \frac{11}{40}$

B. $\frac{1}{5} < \frac{1}{4} < \frac{11}{40}$

C. $\frac{1}{5} < \frac{11}{40} < \frac{1}{4}$

D. $\frac{11}{40} < \frac{1}{5} < \frac{1}{4}$

11. Corrine brought $1\frac{1}{3}$ pounds of sand home from the beach. The shaded part of the rectangles shows how many pounds of sand Corrine brought home from the beach.

Corrine put the sand in bottles to give to friends. She put $\frac{2}{9}$ of a pound of sand in each bottle. What is the **greatest** number of bottles Corrine can put sand in?

A. 4 bottles

B. 6 bottles

C. 8 bottles

D. 9 bottles

12. A box of cookies costs $4. Freeman has $34. The inequality below can be used to find the numbers of boxes of cookies, *x*, Freeman can buy with $34.
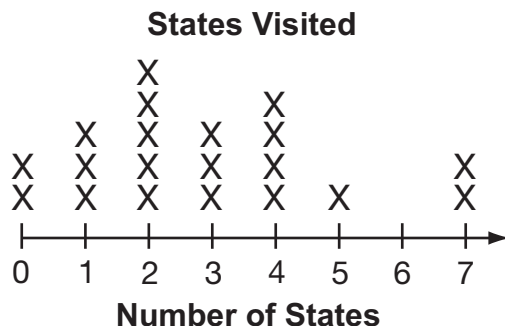
$$4x \leq 34$$

Which statement describes all the possible numbers of boxes of cookies Freeman can buy with $34?

A. He can buy 8 boxes of cookies or fewer.

B. He can buy 9 boxes of cookies or fewer.

C. He can buy 30 boxes of cookies or fewer.

D. He can buy 38 boxes of cookies or fewer.

13. Travel-size toothpaste tubes can be purchased in the following weights: 0.9 ounce, 0.85 ounce, 1.0 ounce, and 0.6 ounce. Which number line represents the weights, in ounces, of the travel-size toothpaste tubes?

A.

B.

C.

D.
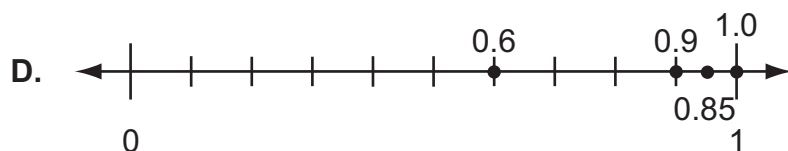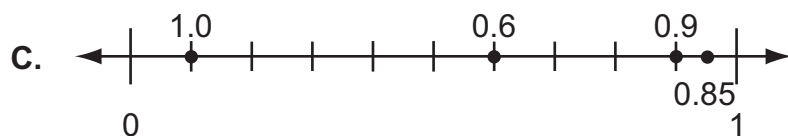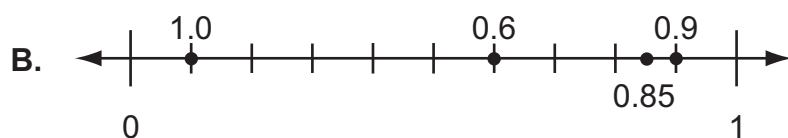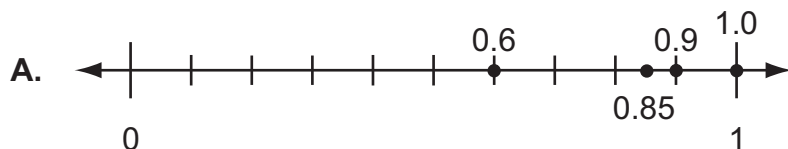
Session 1—Math (No Calculator)

14. Benny asked 20 students how many states, besides Louisiana, they had visited. The line plot below shows the results.

States Visited

```
                X
                X                X
          X     X     X     X
    X     X     X     X     X                    X
    X     X     X     X     X     X              X
    +-----+-----+-----+-----+-----+-----+-----+---->
    0     1     2     3     4     5     6     7
              Number of States
```

Which statement **best** describes the distribution of the data from Benny's survey?

A. Half of the students had visited exactly 2 states.

B. Half of the students had visited 2 or more states.

C. Half of the students had visited 2 or fewer states.

D. Half of the students had visited the same 2 states.

15. Olivia and Ray walk to school. Olivia walks $\frac{1}{4}$ of a mile to school. Her walk is $\frac{2}{3}$ of the distance that Ray walks to school. What is the total distance, in miles, that Ray walks to school?

A. $\frac{1}{6}$ of a mile

B. $\frac{3}{8}$ of a mile

C. $\frac{5}{12}$ of a mile

D. $\frac{11}{12}$ of a mile

16. Amanda, Javier, and Kris each measure the change in their hair lengths over a year.

- Amanda's hair length (A) is 3.4 inches longer than last year.
- Javier's hair length (J) is 2.1 inches shorter than last year.
- Kris's hair length (K) is 0.6 inches shorter than last year.

Which number line **best** represents the changes in hair lengths of each person using points A, J, and K?
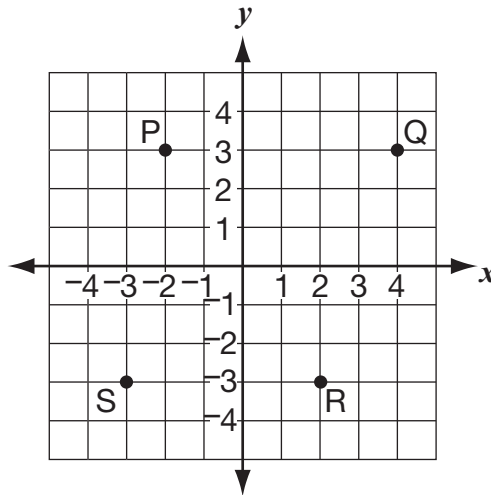
A.

B.

C.

D.
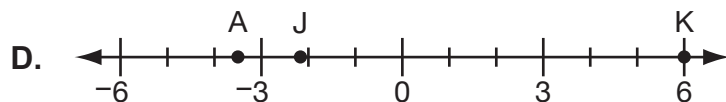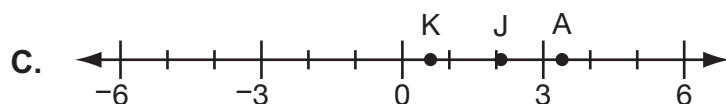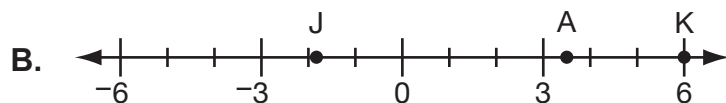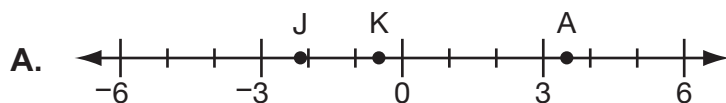
17. Which is a pair of equal expressions?

A. $9y + 6$ and $6y + 9$

B. $7x - 3$ and $3 - 7x$

C. $2y \times 4$ and $2 \times 4y$

D. $5x - 10$ and $5(2 - x)$

**18.** Galina plotted the points below on a coordinate grid.


Which two points are exactly 6 units apart on the coordinate grid?

A. P and Q

B. Q and R

C. R and S

D. S and P

19. Miguel's scooter can travel at a maximum speed of 45 miles per hour. Which inequality models all the speeds, s, at which Miguel's scooter can travel?

A. $s < 45$

B. $s > 45$

C. $s \leq 45$

D. $s \geq 45$

Session 1—Math (No Calculator)

20. Of the 12 people in line at an ice-cream shop, 8 ordered cones with 2 scoops of ice cream. The rest ordered cones with 1 scoop of ice cream. Which picture models this ratio?

A.

C.

B.

D.
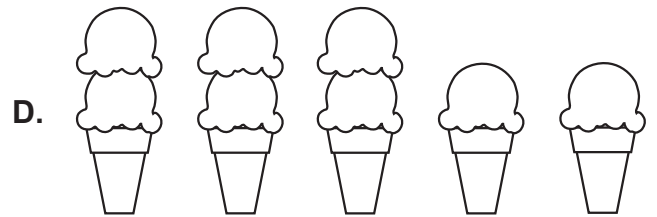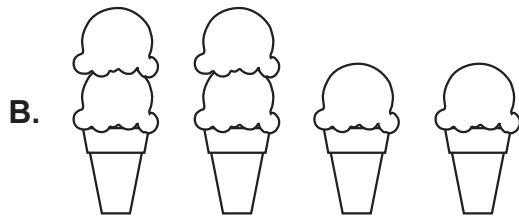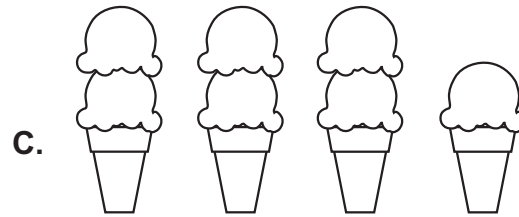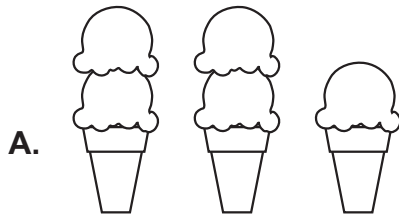
21. Mr. Marquis had a metal pipe that was 1,000 cm in length. He cut the pipe into 16 shorter pieces of equal length. Mr. Marquis used the expression below to find the length of each of the smaller pieces of pipe.

$$1{,}000 \div 16$$

What is the length of each of the smaller pieces of pipe?

A. $62\dfrac{1}{2}$ cm

B. 62.8 cm

**C.** $63\dfrac{1}{2}$ cm

D. 63.8 cm

Session 1—Math (No Calculator)

22. Zaria earns $6 per hour at her job. She also earned a bonus of $30 this week. To find the total amount she earned this week, Zaria used the expression below, where *h* is the number of hours she worked this week.

$$6h + 30$$

Zaria worked 32 hours this week. What is the total amount of money Zaria earned this week?

   A. $68

   B. $192

   C. $222

   D. $662

23. A construction worker is using the coordinate grid below to show the length of a wall inside a house.
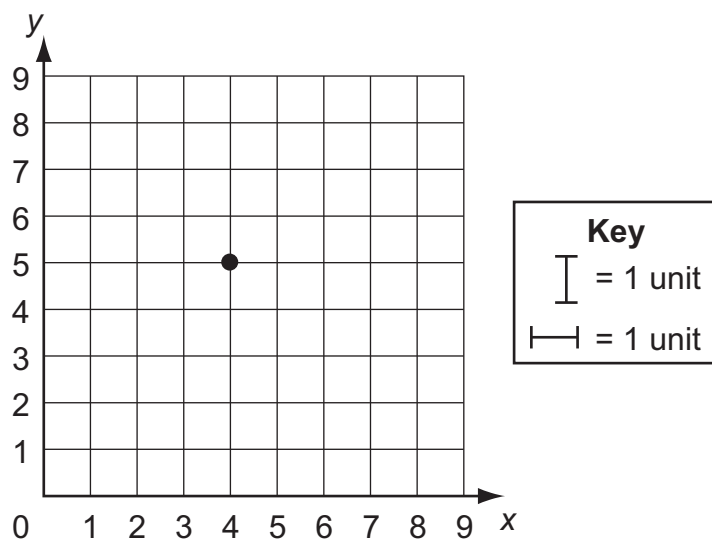
One end of the wall will be at (4, 5). The wall will be 4 units long. Which point could be the location of the other end of the wall?

   A.   (0, 5)

   B.   (4, 4)

   C.   (5, 0)

   D.   (8, 9)

24. Tanya does push-ups and sit-ups every morning. She does *p* push-ups and 2*p* + 5 sit-ups. Which statement describes the number of sit-ups Tanya does every morning?

   A. The number of sit-ups is 5 fewer than half the number of push-ups she does.

   B. The number of sit-ups is 5 more than half the number of push-ups she does.

   C. The number of sit-ups is 5 fewer than twice the number of push-ups she does.

   D. The number of sit-ups is 5 more than twice the number of push-ups she does.

25. **Use the number line to answer the question below.**
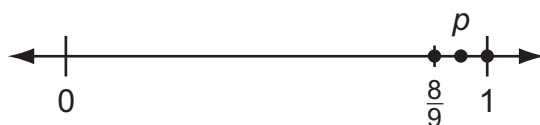
   The number line shows the locations of the values $\frac{8}{9}$, *p*, and 1. Which value could *p* represent?

   A. $\frac{17}{30}$

   B. $\frac{16}{18}$

   C. $\frac{19}{20}$

   D. $\frac{9}{8}$

26. A restaurant sold *h* hamburgers yesterday. The number of cheeseburgers sold yesterday is represented by the expression below.
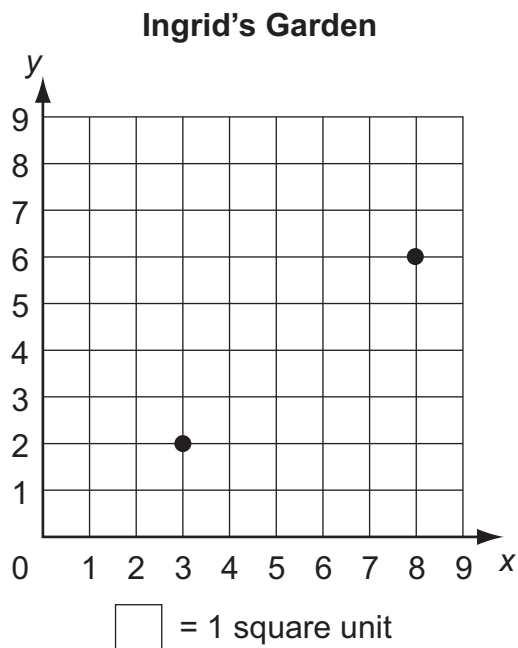
$$6h - 21$$

   Which other expression also shows how many cheeseburgers were sold yesterday?

   A. (*h* – 21) + 5*h*

   B. 3(3*h* – 18)

   C. 6 + (*h* – 21)

   D. 3(2 – 7) × *h*

Session 1—Math (No Calculator)

27. Ingrid used the coordinate grid shown below to plot her rectangular garden.

Ingrid's Garden

$\square$ = 1 square unit

A corner of the garden is at (3, 2) and the opposite corner is at (8, 6). In square units, what is the area of Ingrid's garden?

A. 4 square units

B. 5 square units

C. 18 square units

D. 20 square units

28. Use the expression below to answer the question.

$$4(2x + 10y)$$

Which expression is equivalent to the one shown?

A. $8(x + 5y)$

B. $8x + 10y$

C. $8(x + 10y)$

D. $8x + 14y$

29. A water cooler has 4.2 gallons of water in it. Simon spills 0.25 of a gallon of the water. He uses the expression below to find how many gallons of water are remaining in the water cooler.

4.2 – 0.25

How many gallons of water are remaining in the water cooler?

A. 1.7 gallons

B. 3.05 gallons

C. 3.95 gallons

D. 4.05 gallons

30. The algebraic expression $6x^2 + 9x + 3$ represents the area of a rectangle. What is the area of the rectangle when $x = 3$ feet?

A. 51 square feet

B. 60 square feet

C. 66 square feet

D. 84 square feet

STOP

Math—Sessions 1, 2, and 3
GENERAL INSTRUCTIONS

The Math test has three sessions, two with multiple-choice questions and one with constructed-response questions. You may **not** use a calculator for session 1, but you may use a calculator for sessions 2 and 3.

Write your answers for questions 31 through 60 in the spaces provided on page 39, session 2 answer sheet. Write only one answer for each question. You may work problems in your test booklet or on scratch paper, but you must mark your answer on your answer sheet. You may review your work in this session, but do not work on any other session.

You MAY use a calculator for this session.

31. Will is making a square pyramid out of cardboard. He drew a diagram of the square pyramid he is making as shown below.
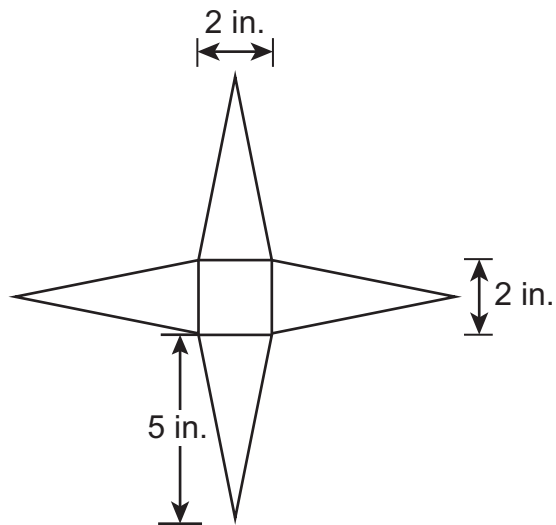
Based on Will's diagram, how many square inches of cardboard make up his square pyramid?

A.   9 square inches

B.   20 square inches

C.   24 square inches

D.   28 square inches

Session 2—Math (Calculator)

32. The table below shows the numbers of gallons of gasoline used and the miles driven for different types of cars.

Gasoline Used and Miles Driven

Type of Car	Gallons of Gasoline Used	Miles Driven
A	5	106
B	10	204
C	15	298
D	20	392

Which type of car had the highest number of miles per gallon?

A. type A

B. type B

C. type C

D. type D

33. Use the inequality below to answer the question.

$$0.08g + 0.2 < 5$$

Which set of values contains possible solutions for g?

A. {25, 40, 65}

B. {29, 43, 59}

C. {31, 47, 60}

D. {44, 54, 64}

34. Korey kept track of the number of miles he ran each week for five weeks. The median number of miles he ran during the five weeks was 20, and the mean was 21. Which list could show the number of miles Korey ran each of the five weeks?

A. 18, 20, 20, 22, 25

B. 20, 20, 20, 25, 25

C. 16, 19, 21, 22, 22

D. 20, 20, 21, 22, 22

35. Which comparison is true?

A. $\left|-5\%\right| < \dfrac{1}{2}$

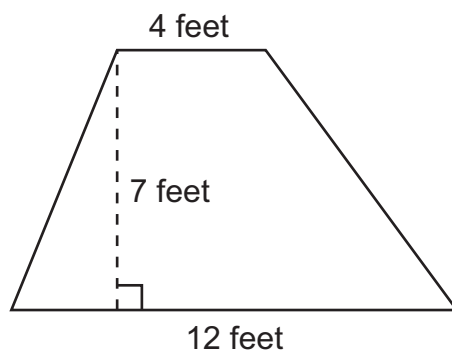**B.** $-\dfrac{4}{9} > \left|37\%\right|$

C. $22\% < \left|-\dfrac{1}{5}\right|$

D. $49\% > \left|-\dfrac{5}{8}\right|$

36. The top of a display counter at a store is in the shape of a trapezoid. The lengths of the front, back, and width, in feet, of the top of the display counter are shown below.

4 feet

7 feet

12 feet

What is the area of the top of the display counter?

A. 30 square feet

B. 40 square feet

C. 56 square feet

D. 66 square feet

37. A swim instructor had a contest to see how many seconds her students could hold their breath underwater. The results from the contest are shown in the list below.

17, 34, 40, 41, 50, 50, 53, 56, 57, 58, 64, 70

Which histogram represents the results from the contest?

A.

Time Holding Breath Underwater

B.

Time Holding Breath Underwater

C.

Time Holding Breath Underwater

D.

Time Holding Breath Underwater
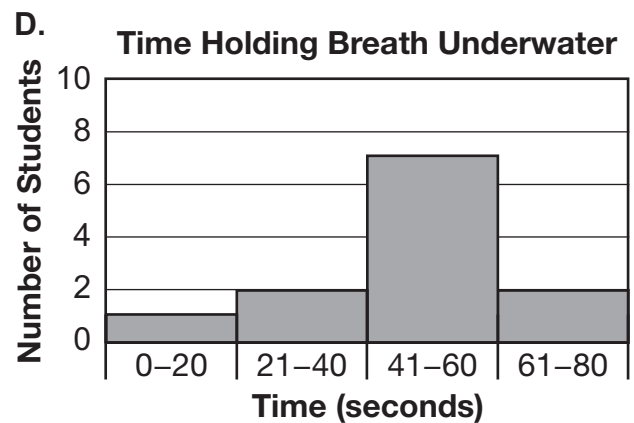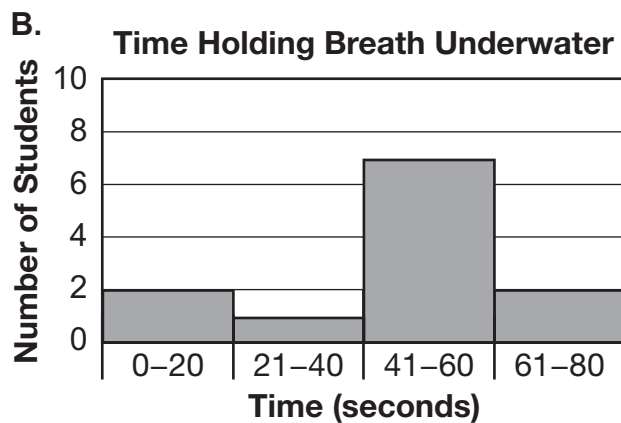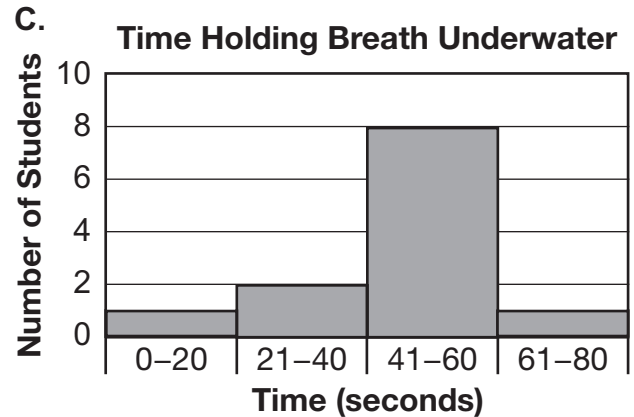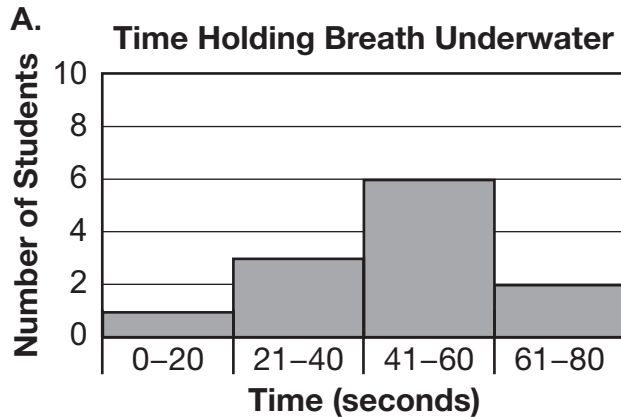
Session 2—Math (Calculator)

**38.** Pascal had a rectangular piece of paper. He cut off a corner of the paper. The shape below is what was left.

Pascal's Paper
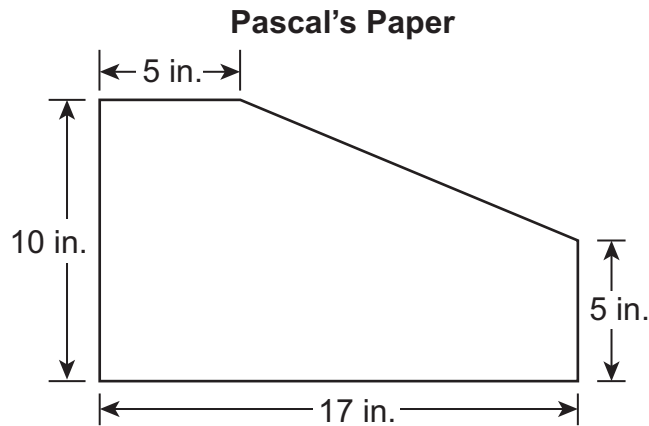
What is the area, in square inches, of the shape that was left?

A. 50 square inches

B. 110 square inches

C. 140 square inches

D. 170 square inches

39. Samuel has a hamster cage that is a rectangular prism. It is $20\frac{1}{2}$ inches long, 12 inches deep, and $10\frac{1}{4}$ inches tall. What is the volume, in cubic inches, of Samuel's hamster cage?

A. $579\frac{1}{8}$ cubic inches

B. $1,158\frac{1}{4}$ cubic inches

C. $2,400\frac{1}{8}$ cubic inches

D. $2,521\frac{1}{2}$ cubic inches

40. The start of a movie is represented by the number 0. Ellie arrived 5 minutes before the movie started. The time she arrived is represented by the number –5. Brad arrived 5 minutes after the movie started. The number that represents the time Lauren arrived at the movie is –8. At what point did Lauren arrive at the movie?

A. after Brad

B. before Ellie

C. after Ellie and before the movie started

D. after the movie started and before Brad

41. Two of the vertices of a rectangle are plotted on the coordinate grid below.
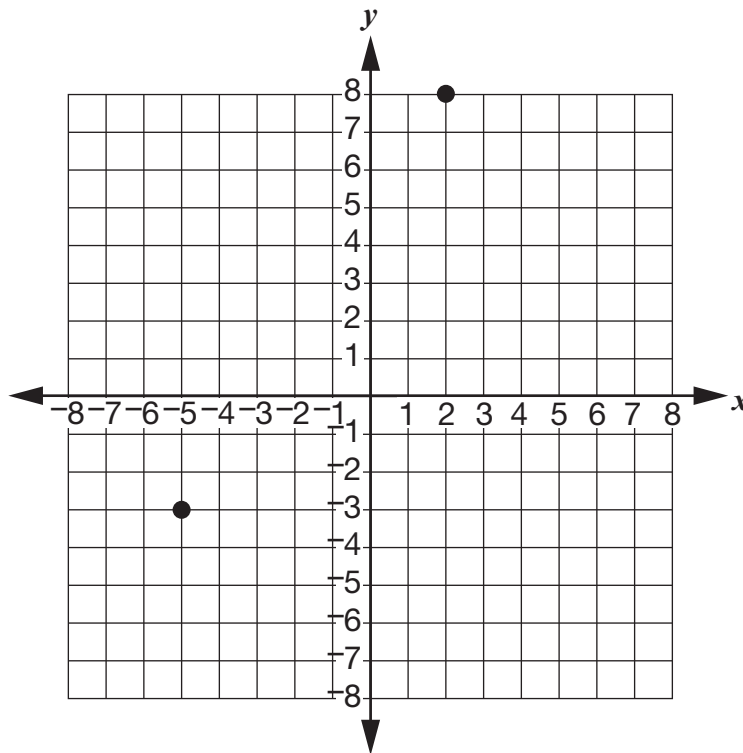
Which ordered pairs could be the other two vertices of the rectangle?

A. (2, –3) and (–5, 8)

B. (2, –5) and (–3, 8)

C. (8, –3) and (–5, 2)

D. (8, –5) and (–3, 2)

42. A movie theater is playing 3 movies. The length, in minutes, of each movie is shown in the table below.

Movie Lengths

Movie	Length (minutes)
1	87
2	129
3	102

What is the mean length, in minutes, of the 3 movies playing at the theater?

A. 15

B. 42

C. 102

D. 106

43. At a hardware store the price of a rake, r, is one-third the price of a shovel, s. Which equation represents the relationship between the price of a rake and the price of a shovel?

A. $\frac{1}{3}r = s$

B. $3r = s$

**C.** $r = \frac{1}{3} + s$

D. $s = 3 + r$

44. Gia collected data on the weights, in ounces, of five newborn puppies. The weights are shown in the list below.

<p style="text-align:center">5, 6, 7, 11, 11</p>

Which statement regarding the mean, median, and range of the weights of the puppies is true?

  A.   The median is greater than the mean, and the range is 6.

  B.   The mean is greater than the median, and the range is 6.

  C.   The median is greater than the mean, and the range is 11.

  D.   The mean is greater than the median, and the range is 11.

45. Gene has $35. He will earn more than $80 next week. He will use all his money to buy clothes. Which number line shows all the possible amounts of money, in dollars, he will have after next week to buy clothes?

A.

B.

C.

D.
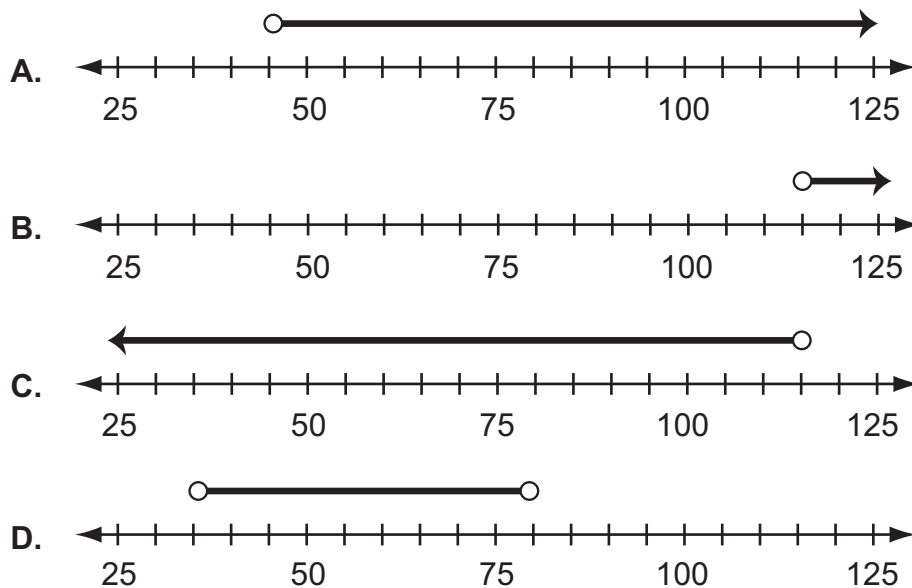
46. In a small group of ducks, there are 6 males and 2 females. To model this, Jake drew the diagram below.
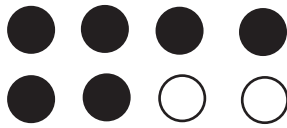
Which ratio of males to females is an equivalent ratio to the model Jake drew?

A. 2:8

B. 8:6

C. 4:12

D. 12:4

47. The table below represents the number of paintings, y, that Jordan completed in x years.

Jordan's Paintings

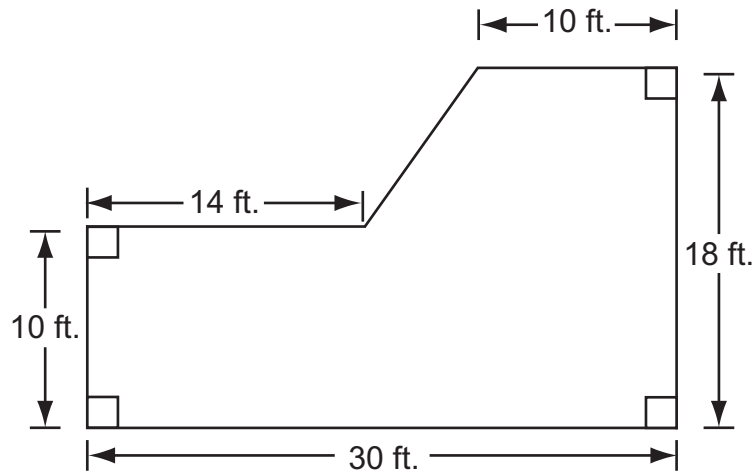| Year (x)	Paintings (y)
1	4
2	7
3	10
4	13

Which equation describes the relationship between the number of paintings and the year?

A. $y = x + 3$

B. $y = 3x + 1$

C. $y = 3x + 4$

D. $y = 4x + 3$

Session 2—Math (Calculator)

48. The figure below shows a diagram of Laura's front porch.

Laura's Front Porch

What is the area of Laura's front porch?

A. 380 square feet

B. 404 square feet

C. 428 square feet

D. 540 square feet

49. There are *d* dogs that live in Stacy's neighborhood. There are 3 times as many cats, *c*, that live in her neighborhood as dogs. In Stacy's neighborhood there are 18 cats. Which statement about this situation is true?

A. The situation can be represented by the equation $3c = d$; therefore, since there are 18 cats there are also 6 dogs.

B. The situation can be represented by the equation $3c = d$; therefore, since there are 18 cats there are also 54 dogs.

C. The situation can be represented by the equation $3d = c$; therefore, since there are 18 cats there are also 6 dogs.

D. The situation can be represented by the equation $3d = c$; therefore, since there are 18 cats there are also 54 dogs.

50. Dustin asked his classmates how many minutes they spent on homework last weekend. The table below shows the results.

Time Spent on Homework

Minutes	Frequency
0–30	9
31–60	13
61–90	7
more than 90	4

Which statement about the number of minutes Dustin's classmates spent on homework **must** be true?

A. Everyone spent at least 1 minute on homework last weekend.

B. At least 1 student spent exactly 60 minutes on homework last weekend.

C. More than half of Dustin's classmates spent 1 hour or less on homework last weekend.

D. More students spent more than 90 minutes on homework last weekend than spent 30 minutes or less.

51. Celestino paid $28.14 for 6 gallons of milk. What was the price per gallon of milk?

A. $4.69

B. $6.02

C. $22.14

D. $168.84

52. Desireé has a stack of wood blocks. The edge length of each wood block is $\frac{1}{4}$ of a foot. The stack is in the shape of a rectangular prism as shown below.

Stack of Wood Blocks
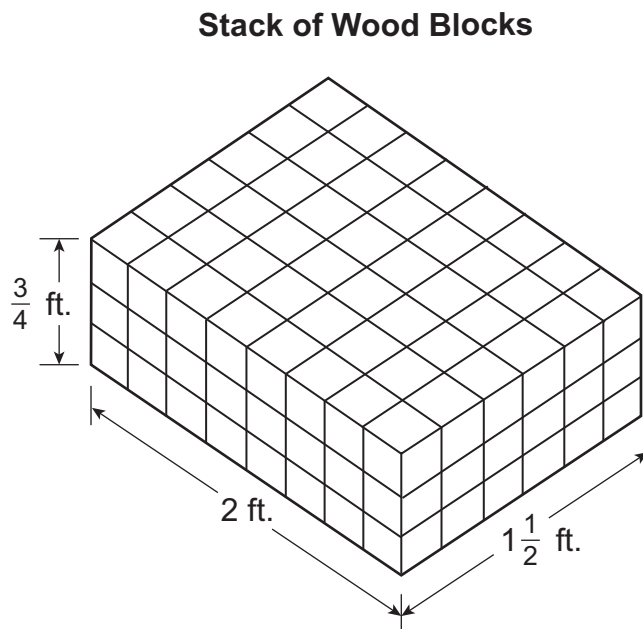
What is the volume, in cubic feet, of the stack of wood blocks?

A. $1\frac{1}{3}$ cubic feet

B. $2\frac{1}{4}$ cubic feet

C. $3\frac{3}{8}$ cubic feet

D. $4\frac{1}{4}$ cubic feet

53. Mark pays $4.68 for 0.72 of a pound of almonds. Based on this cost ratio, which statement is true?

    A. Mark pays a rate of $3.37 per pound of almonds.

    B. Mark pays a rate of $3.96 per pound of almonds.

    C. Mark pays a rate of $5.40 per pound of almonds.

    D. Mark pays a rate of $6.50 per pound of almonds.

54. The table below represents the number of participants, y, on the Valley Middle School debate team after x years.

Debate Team

Year (x)	Number of Participants (y)
1	10
2	12
3	14
4	16
5	18

What is the relationship between the number of participants on the debate team and the year?

    A. $y = x + 2$

    B. $y = 2x + 8$
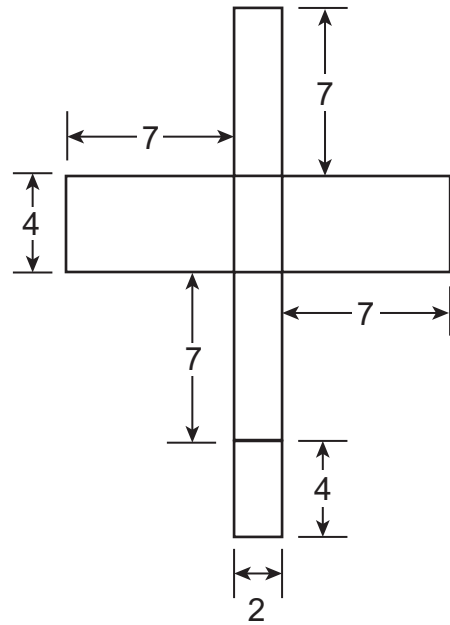
    C. $y = 2x + 10$

    D. $y = 8x + 2$

55. Which diagram is of a net of a rectangular prism with a surface area of 78 square units?
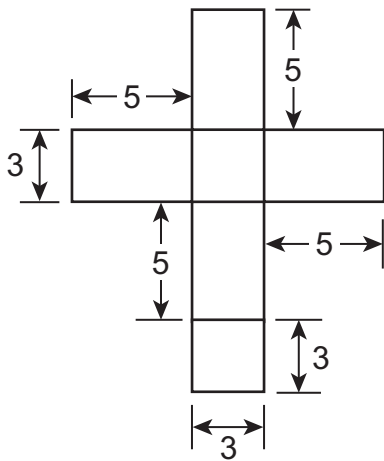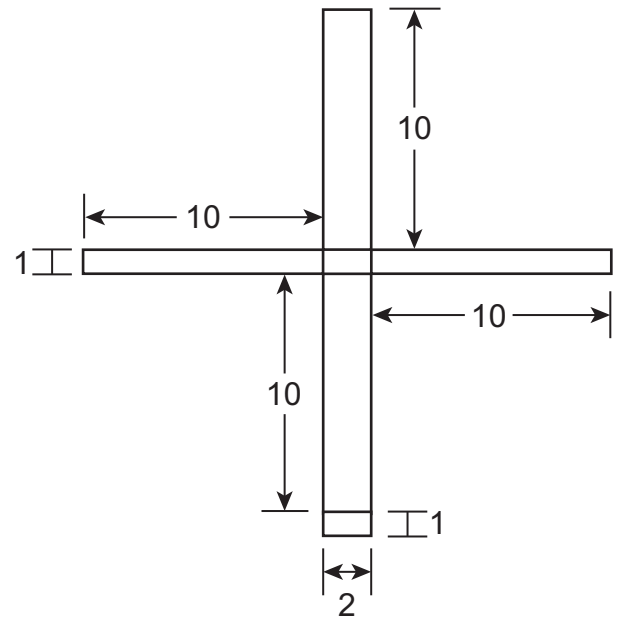
A.
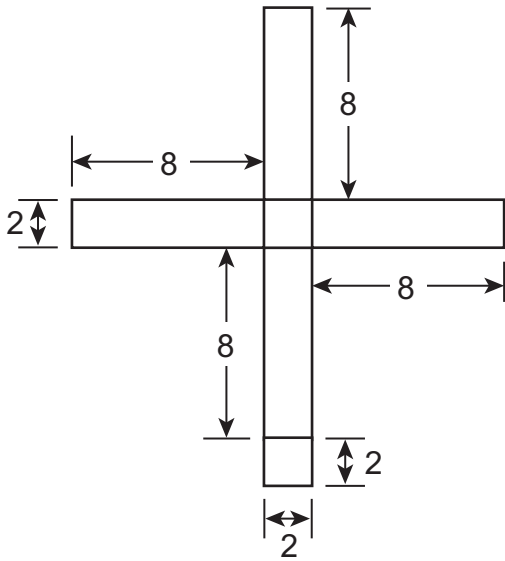
C.

B.

D.

Session 2—Math (Calculator)

56. Buses from two different bus routes each stop at the same corner at 9 A.M. Buses from one route stop at that corner every 9 minutes. Buses from the other route stop there every 12 minutes. What is the fewest number of minutes that will pass until the next time buses from both routes are at that corner at the same time?

A. 21 minutes

B. 36 minutes

C. 54 minutes

D. 108 minutes

57. The model below represents the number of lightbulbs in Katie's home.
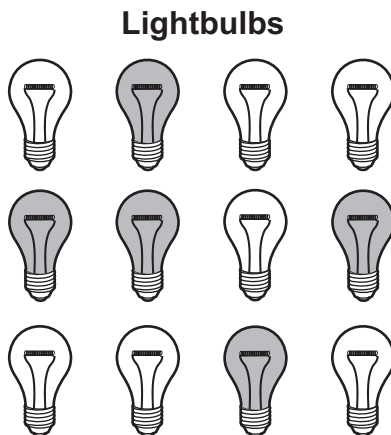
Lightbulbs

The shaded lightbulbs represent the number of lightbulbs that are burnt out. Which ratio is equivalent to the ratio of burnt-out lightbulbs to working lightbulbs?

A. 5:12

B. 7:12

C. 5:7

D. 7:5

Session 2—Math (Calculator)

58. During 8 basketball games, Marianne scored a total of x points, and Sarah scored a total of y points. Marianne scored more points than Sarah did. Which expression represents the difference between the average number of points Marianne and Sarah each scored per game?

A. $\dfrac{x-y}{8}$

B. $\dfrac{x+y}{8}$

C. $8(x-y)$

D. $8(x+y)$

59. Use the figures below to answer the question.
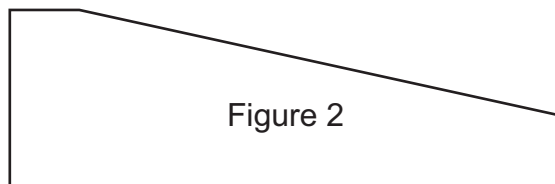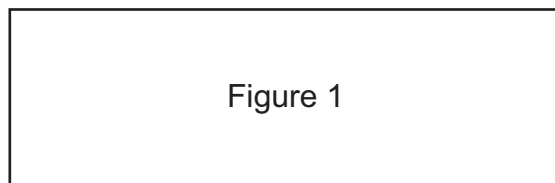

Figure 1

Figure 2

Figure 1 has an area of 80 square units. What is the **best** estimate for the area of Figure 2 in square units?

A. 25 square units

B. 40 square units

C. 55 square units

D. 75 square units

60. Dennis started hiking at sea level. He recorded his starting position as 0. He climbed upward, and his elevation increased by 400 feet. He recorded his ending position as 400. Using this same method of measuring, a second hiker had a starting position of −40. Which statement describes the starting position of the second hiker?

    A. The second hiker started 40 feet below sea level.

    B. The second hiker started 40 feet above sea level.

    C. The second hiker started 40 feet below the ending position of Dennis.

    D. The second hiker started 40 feet above the ending position of Dennis.

STOP

Math—Sessions 1, 2, and 3
GENERAL INSTRUCTIONS

The Math test has three sessions, two with multiple-choice questions and one with constructed-response questions. You may **not** use a calculator for session 1, but you may use a calculator for sessions 2 and 3.

Write your answers for questions 61 and 62 in the spaces provided below. The questions have more than one part. Show all the work you do to find your answers. Even if you cannot answer all parts, answer as many as you can. You may still get points for answering part of a question. Be sure to write clearly. You may review your work in this session, but do not work on any other session.

You MAY use a calculator for this session.

61. Carl has 200 coins in a jar. Nickels make up 10% of the coins in the jar, and pennies make up 60% of the coins in the jar. All the coins in the jar are pennies, nickels, or dimes.

A. Inside each circle below, write 5¢ for nickel, 1¢ for penny, or 10¢ for dime so that the percentages of the pennies, nickels, and dimes match the percentages of pennies, nickels, and dimes in Carl's entire jar.

B. What is the ratio of dimes to pennies?

C. Carl adds 50 quarters to his jar. What effect does this have on the ratio of dimes to pennies? Explain your answer.
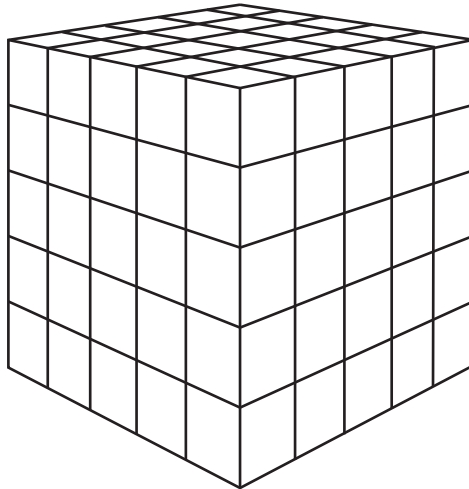
62. Kyle has a pile of cube-shaped blocks that measure 1 inch on each side.

A. He arranged some of the blocks to create the figure shown.
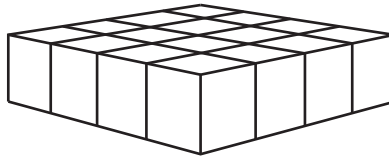
Using an exponent greater than 1, write an expression whose value is equal to the number of blocks Kyle used to create the figure shown above.

B. He arranged another set of blocks to create the figure below.

Using an exponent greater than 1, write an expression whose value is equal to the number of blocks Kyle used to create this figure.

C. Kyle made a third figure, a cube, using more than 1 block. Kyle used a whole number and an exponent of 3 to write an expression that represented the total number of blocks in the cube. He then used a whole number and an exponent of 2 to write a different expression to represent the total number of blocks in the cube. He did not use any operations other than the exponents in his two expressions. What are two different expressions Kyle could have written to represent the total number of blocks in the third figure? Show or explain why your two expressions are correct.

STOP

Multiple-Choice Answer Sheet

Name: _____

Session 1

1. _____   16. _____

2. _____   17. _____

3. _____   18. _____

4. _____   19. _____

5. _____   20. _____

6. _____   21. _____

7. _____   22. _____

8. _____   23. _____

9. _____   24. _____

10. _____   25. _____

11. _____   26. _____

12. _____   27. _____

13. _____   28. _____

14. _____   29. _____

15. _____   30. _____

Multiple-Choice Answer Sheet

Name: _____

Session 2

31. _____   46. _____

32. _____   47. _____

33. _____   48. _____

34. _____   49. _____

35. _____   50. _____

36. _____   51. _____

37. _____   52. _____

38. _____   53. _____

39. _____   54. _____

40. _____   55. _____

41. _____   56. _____

42. _____   57. _____

43. _____   58. _____

44. _____   59. _____
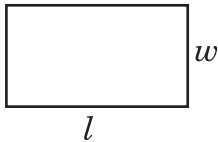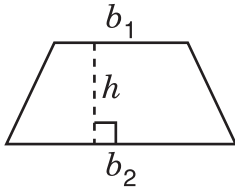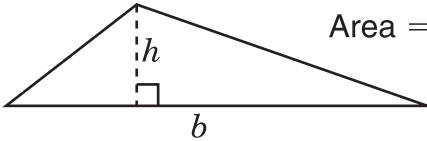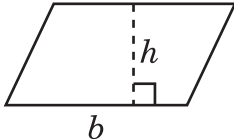
45. _____   60. _____
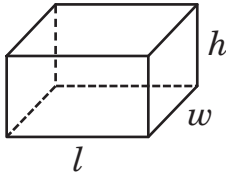
Use the information below to answer questions on the Math test.

Rectangle

$\text{Area} = l \cdot w$

$\text{Perimeter} = 2 \cdot (l + w)$

Trapezoid

$\text{Area} = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$

Triangle

$\text{Area} = \frac{1}{2} \cdot b \cdot h$

Parallelogram

$\text{Area} = b \cdot h$

Mean: In a collection of data, the sum of all the data divided by the number of data

Median: The middle number or average of the two middle numbers in a collection of data when the data are arranged in order

Mode: The number or numbers that occur most often in a collection of data

Range: The difference between the greatest and the least numbers in a collection of data

Rectangular Prism

$\text{Volume} = l \cdot w \cdot h$

$\text{Volume} = B \cdot h$

$B = l \cdot w$

Multiple-Choice Answer Key

Name: _____

Session 1

1.	**C**		16.	**A**
2.	**A**		17.	**C**
3.	**B**		18.	**A**
4.	**B**		19.	**C**
5.	**A**		20.	**A**
6.	**D**		21.	**A**
7.	**C**		22.	**C**
8.	**D**		23.	**A**
9.	**C**		24.	**D**
10.	**B**		25.	**C**
11.	**B**		26.	**A**
12.	**A**		27.	**D**
13.	**A**		28.	**A**
14.	**C**		29.	**C**
15.	**B**		30.	**D**

Multiple-Choice Answer Key

Name: _____

🖩 **Session 2**

31.	C	46.	D
32.	A	47.	B
33.	B	48.	B
34.	A	49.	C
35.	A	50.	C
36.	C	51.	A
37.	D	52.	B
38.	C	53.	D
39.	D	54.	B
40.	B	55.	B
41.	A	56.	B
42.	D	57.	C
43.	B	58.	A
44.	B	59.	C
45.	B	60.	A

Constructed-Response Scoring Rubrics

Session 3

61.

Scoring Rubric	
4	The student earns 5 points.
3	The student earns 4 points.
2	The student earns 2 or 3 points.
1	The student earns 1 point OR demonstrates minimal understanding of the standard being measured.
0	The student's response is incorrect, irrelevant to the skill or standard being measured, or blank.

Sample Answer:

Part A.

5¢	1¢	1¢	1¢	1¢
1¢	1¢	10¢	10¢	10¢

Part B. 3:6

Part C. This has no effect on the ratio of dimes to pennies because only quarters were added to the jar, and the numbers of dimes and pennies stay the same.

Points Assigned:

Part A. 2 points
2 points for correctly labeling the correct number of coins for all three types of coins
OR
1 point for labeling the correct number of one type of coin and labeling the incorrect number of at least one type of coin

Part B. 1 point
1 point for correctly determining the ratio 3:6 (or equivalent, e.g., 1:2, 30:60)

Part C. 2 points
2 points for the correct answer and a correct explanation
OR
1 point for the correct answer with an incorrect or insufficient explanation
OR
1 point for an incorrect answer with a correct explanation

Note: Scorers should follow along with the student's work throughout. If the student makes an error in a previous part and subsequent answers are correct based on the earlier error, the student should not be penalized again.

62.

Scoring Rubric	
4	The student earns 4 points.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point OR demonstrates minimal understanding of the standard being measured.
0	The student's response is incorrect, irrelevant to the skill or standard being measured, or blank.

Sample Answer:

Part A. 4^2 or equivalent

Part B. 5^3 or equivalent

Part C. 8^2 and 4^3; These two expressions work because both 8^2 and 4^3 are equal to 64. Or equivalent

Points Assigned:

Part A. 1 point
1 point for providing a correct expression with an exponent greater than 1

Part B. 1 point
1 point for providing the correct expression with an exponent greater than 1

Part C. 2 points
1 point for providing two expressions (both monomials), one with an exponent of 2 and the other with an exponent of 3, that use whole numbers and are equivalent
AND
1 point for giving complete and accurate work or explanation that shows that their quadratic monomial is equal to their cubic monomial