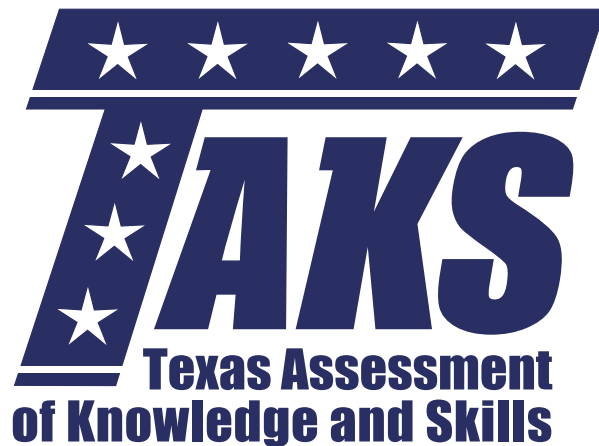


STUDENT NAME _____



**GRADE 8
MATHEMATICS
READING
SOCIAL STUDIES**

Administered Spring 2004

MATHEMATICS

DIRECTIONS

Read each question. Then fill in the correct answer on your answer document. If a correct answer is not here, mark the letter for “Not here.”

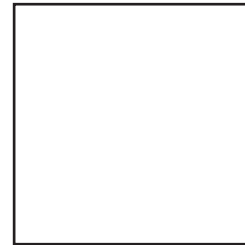
SAMPLE A

Find the greatest common factor of 12 and 18.

- A 3
- B 6
- C 9
- D Not here

SAMPLE B

Find the perimeter of this square rug in meters.



3.2 m

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



1 The table below shows land-speed records.

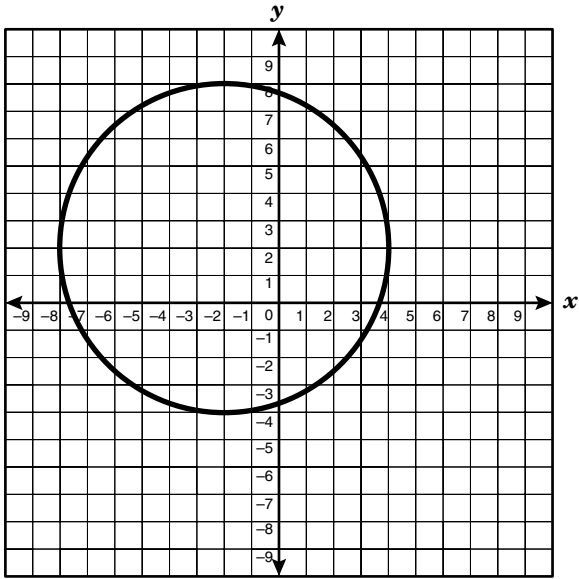
Land-Speed Records

Driver	Year	Speed (mph)
Campbell	1935	301.13
Elyston	1938	357.5
Cobb	1947	394.2
Breedlove	1965	600.6
Noble	1983	633.47
Green	1997	763.04

Whose land-speed record did Green exceed by exactly 368.84 miles per hour?

- A Elyston
- B Cobb
- C Breedlove
- D Noble

- 2 A circle with a radius of 6 units is shown below.



What are the coordinates of the center of the circle?

- F $(-1, 2)$
- G $(-2, 3)$
- H $(-2, 2)$
- J $(-3, 2)$

- 3 The diameter of a blood cell is measured in micrometers. A micrometer is 0.000001 meter. Which expression represents this number in scientific notation?

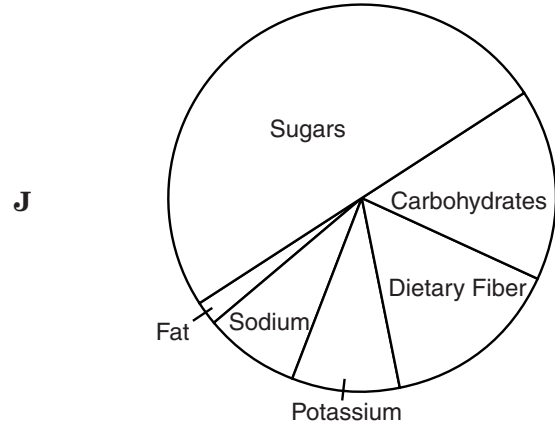
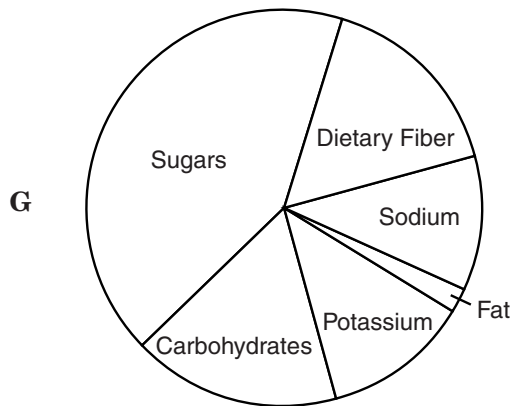
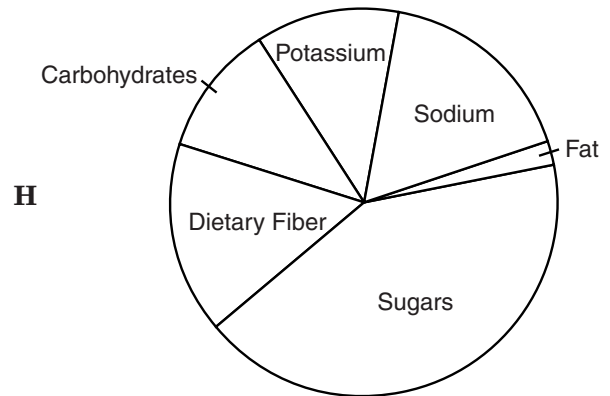
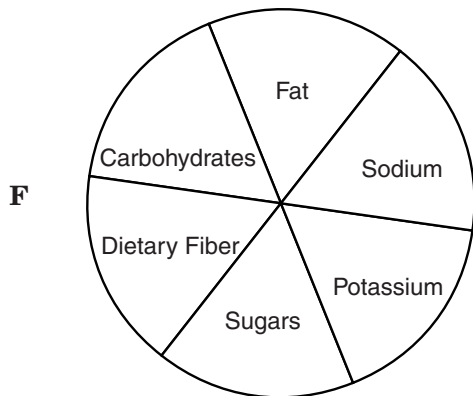
- A 1.0×10^7
- B 1.0×10^6
- C 1.0×10^{-6}
- D 1.0×10^{-7}

- 4 Miss Koziel eats a bowl of her favorite cereal every morning. The table below shows the nutritional content of one serving of this cereal.

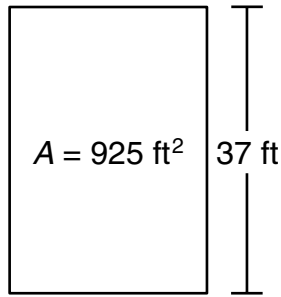
Cereal's Nutritional Content

Nutrition	Percent of Serving
Fat	2%
Sodium	11%
Potassium	12%
Carbohydrates	17%
Dietary Fiber	16%
Sugars	42%

Which circle graph best represents these data?



- 5 An architect designed a rectangular room with an area of 925 square feet.



What is the width of the room if the length is 37 feet?

- A 25 ft
- B 74 ft
- C 425.5 ft
- D 462.5 ft

- 6 The Webster Junior High faculty includes 37 teachers. The principal's and teachers' annual salaries total \$1,266,140. If the principal's salary is \$54,250, which equation can be used to find s , the average salary for a teacher at Webster Junior High?

F $s = \frac{(1,266,140 + 54,250)}{37}$

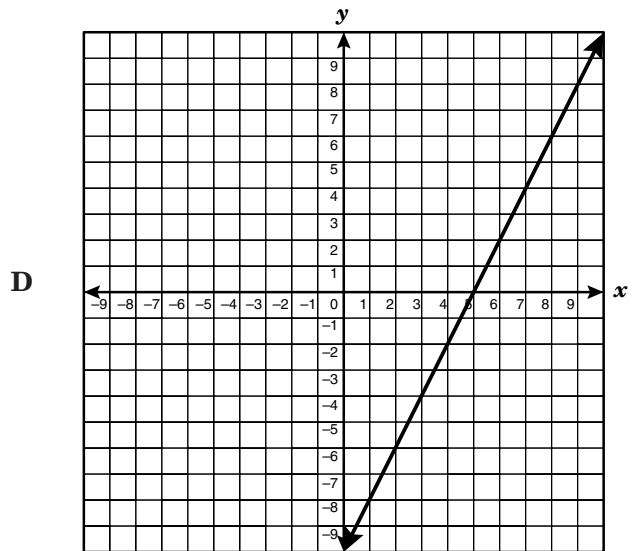
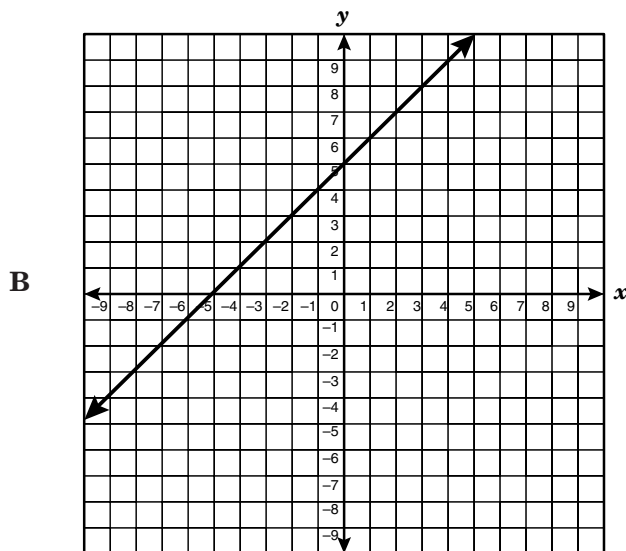
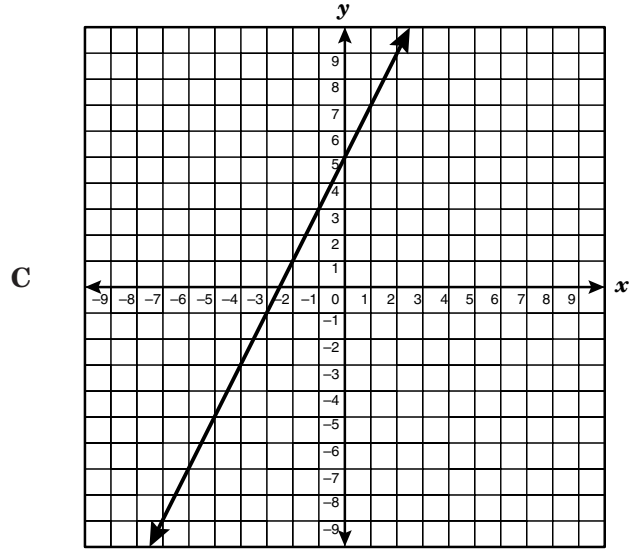
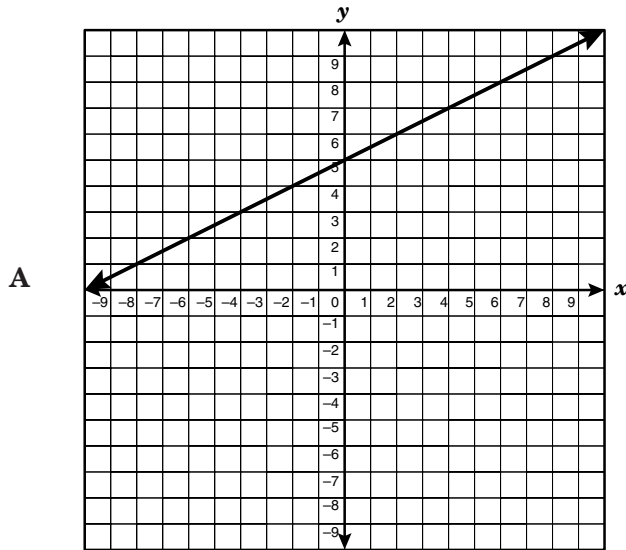
G $s = 1,266,140 + \frac{54,250}{37}$

H $s = 1,266,140 - \frac{54,250}{37}$

J $s = \frac{(1,266,140 - 54,250)}{37}$

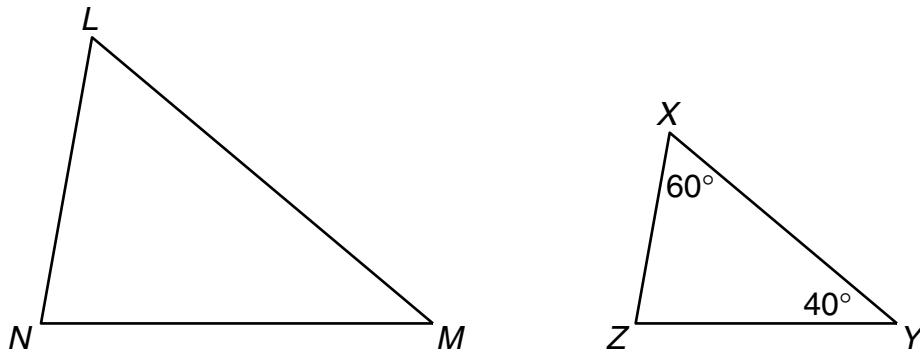
7 Which line graphed below best represents the table of values for the ordered pair (x, y) ?

x	y
-3	3.5
0	5
2	6
5	7.5



- 8 Principal Alcocer determined that 80% of the students at his school wore boots to school at least two days a week during winter. If his school has 1,200 students, which statement does NOT represent Principal Alcocer's data?
- F During winter 960 students wear boots to school at least two days a week.
- G During winter 240 students wear boots to school fewer than two days a week.
- H During winter more than $\frac{1}{2}$ of the students wear boots to school at least two days a week.
- J During winter less than $\frac{1}{5}$ of the students wear boots to school fewer than two days a week.
-

- 9 $\triangle LMN$ is similar to $\triangle XYZ$.



Which procedure can be used to find the number of degrees in $\angle N$?

- A Subtract 100 from 360
- B Subtract 100 from 180
- C Divide 100 by 2
- D Divide 180 by 3

10 A pattern of equations is shown below.

$$1\% \text{ of } 800 = 8$$

$$2\% \text{ of } 400 = 8$$

$$4\% \text{ of } 200 = 8$$

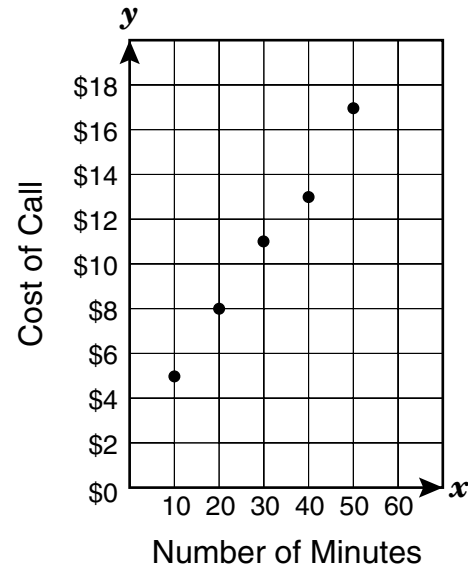
$$8\% \text{ of } 100 = 8$$

$$16\% \text{ of } 50 = 8$$

Which statement best describes this pattern of equations?

- F When the percent is doubled and the other number is halved, the answer is 8.
- G When the percent is doubled and the other number is doubled, the answer is 8.
- H When the percent is increased by 2 and the other number remains the same, the answer is 8.
- J When the percent remains the same and the other number is increased by 2, the answer is 8.

11 The scatterplot below shows the cost of phone calls Betsy made to her brother overseas in relation to the number of minutes per phone call.



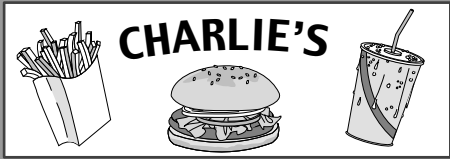
Based on the information in the scatterplot, which statement is a valid conclusion?

- A As Betsy made more phone calls, the cost of the phone calls increased.
- B As Betsy made fewer phone calls, the cost of the phone calls decreased.
- C As Betsy decreased the number of minutes on the phone, the number of phone calls decreased.
- D As Betsy increased the number of minutes on the phone, the cost of the phone calls increased.

12 After careful consideration of the menu shown below, Mireya purchased Charlie's Value Meal No. 2.

Charlie's Menu

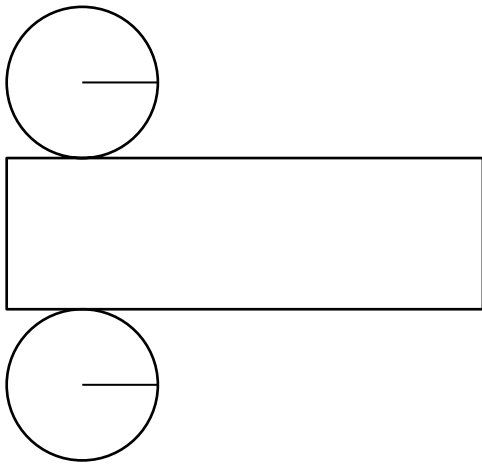
Value Meal #1	Sandwiches	Sides
\$4.29 Regular Burger, Medium Fries, Medium Drink	Regular Burger \$1.99 Bacon Burger \$2.39 Chicken Sandwich \$2.49 Fish Sandwich \$2.29	Small Fries \$0.99 Medium Fries \$1.29 Large Fries \$1.69 Small Onion Rings \$1.19 Medium Onion Rings \$1.39 Large Onion Rings \$1.69
Value Meal #2	Drinks	
\$4.69 Chicken Sandwich, Medium Fries, Medium Drink	Small Soft Drink \$0.99 Medium Soft Drink \$1.29 Large Soft Drink \$1.59 Shake or Malt \$1.89	



Mireya calculated her savings by finding the sum of \$2.49 plus 2 times \$1.29. What did Mireya do next to calculate her savings?

- F Add \$1.29 to the sum
- G Divide the sum by 3
- H Subtract \$4.29 from the sum
- J Subtract \$4.69 from the sum

- 13 Mrs. Juárez has a cylindrical pincushion with the net shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the net in centimeters.



Which is closest to the lateral surface area of the cylindrical pincushion?

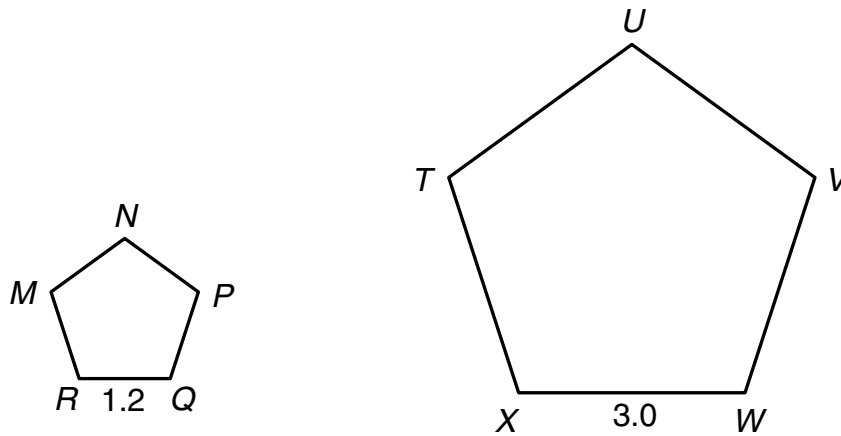
- A 3.0 cm^2
- B 6.3 cm^2
- C 9.4 cm^2
- D 12.6 cm^2

- 14 Mr. Flores ran a 26.1-mile marathon last year. He completed the race in 5 hours 6 minutes. This year Mr. Flores would like to run the same marathon in 4.5 hours. How many miles per hour should Mr. Flores run to complete the marathon in 4.5 hours?

$$[D = rt]$$

- F 5.8 mph
- G 6.2 mph
- H 11.8 mph
- J 5.6 mph

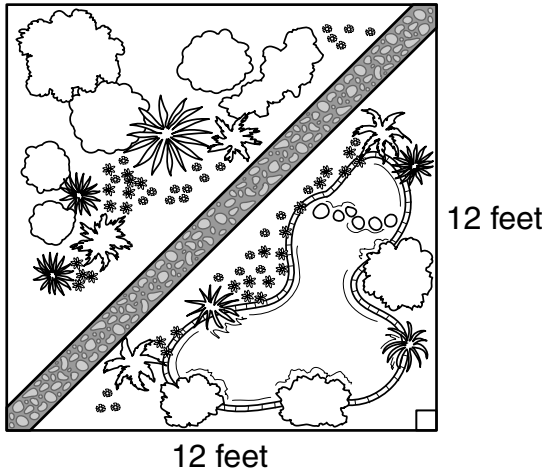
- 15 Regular pentagon $MNPQR$ is similar to pentagon $TUVWX$.



What scale factor was used to dilate regular pentagon $MNPQR$ to pentagon $TUVWX$?

- A 0.4
B 1.8
C 2.5
D 4.2
-
- 16 Cody's parents bought a big-screen television for \$1,099.99 and a DVD player for \$99.99, including tax. Cody's parents plan to pay the total amount in 18 equal monthly payments. What is a reasonable amount for each monthly payment?
- F \$50.00
G \$150.00
H \$113.00
J \$67.00

- 17 Mr. Elliott designed a flower garden in the shape of a square. He plans to build a walkway through the garden, as shown below.



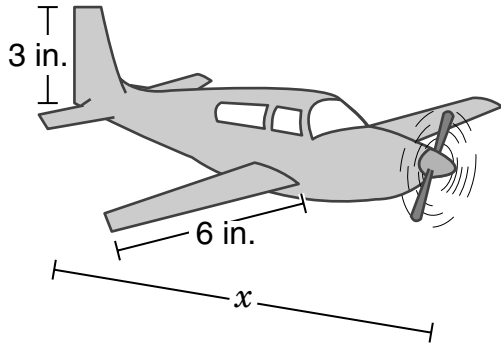
Which is closest to the length of the walkway?

- A 36 ft
 B 24 ft
 C 17 ft
 D 13 ft
- 18 A retail store had total sales of \$436, \$650, \$530, \$500, \$650, \$489, and \$423 last week. Which measure of data would make the store's sales last week appear the most profitable?
- F Mode
 G Median
 H Mean
 J Range

- 19 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?

- A $8m + 450m = 900$
 B $2m + 450 = 900$
 C $2(8m + 450) = 900$
 D $8m + 450 = 900$

- 20 Roderick is building a model of an actual airplane with a length of 20 feet.



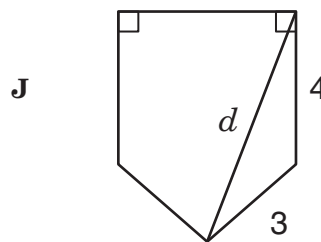
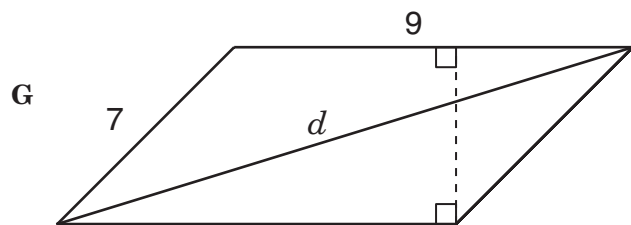
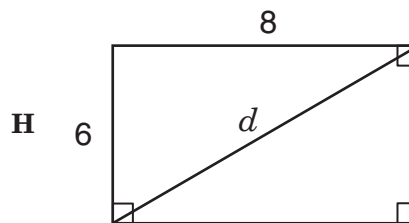
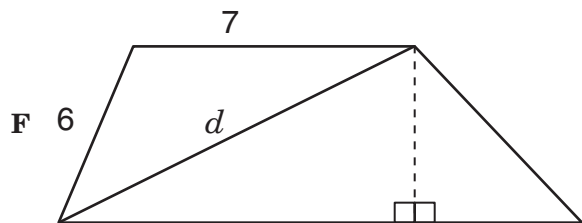
What other information is necessary in order to find x , the length of the model airplane?

- F The ratio of the length of the model airplane's tail to the length of its wing
- G The speed of the model airplane
- H The scale factor used
- J The model airplane's wingspan

- 21 Sheila made a scale drawing of a room. The actual room has a width of 16 feet and a length of 24 feet. Her drawing has a length of 3 inches. What is the width, in inches, of the scale drawing of the room?

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

- 22 Line segment d is a diagonal in each polygon shown below. Which drawing shows enough information to find the length of line segment d ?



- 23 To make a certain shade of orange paint, Calvin must add 20 ounces of yellow paint to every 50 ounces of red paint. If he uses 200 ounces of red paint, which proportion can he use to find x , the number of ounces of yellow paint he should add to get the shade of orange he wants?

- A $\frac{20}{50} = \frac{x}{200}$
- B $\frac{30}{20} = \frac{x}{200}$
- C $\frac{20}{x} = \frac{200}{30}$
- D $\frac{50}{x} = \frac{200}{20}$

24 Mr. Johnson is considering renting an office that has 325 square feet of space. The rent is \$1,300 per month. A larger office in the same building is available for \$2,100 per month at the same rate per square foot as the smaller office. What is the area of the larger office?

- F** 525 ft²
- G** 1,625 ft²
- H** 3,400 ft²
- J** 840 ft²

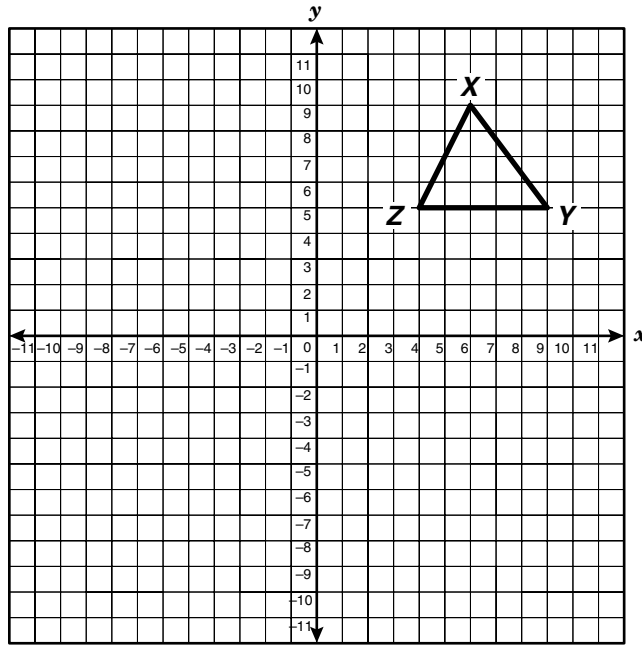
25 Which fraction is between $\frac{2}{3}$ and $\frac{3}{4}$?

- A** $\frac{1}{2}$
- B** $\frac{3}{5}$
- C** $\frac{5}{7}$
- D** $\frac{7}{8}$

26 Mr. Thomas is framing a 28-by-40-foot area for a concrete slab. If the concrete company charges \$120.00 per cubic yard of concrete, what other information is needed in order to find c , the cost of the concrete slab?

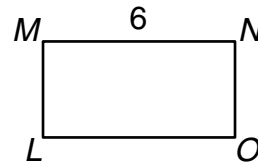
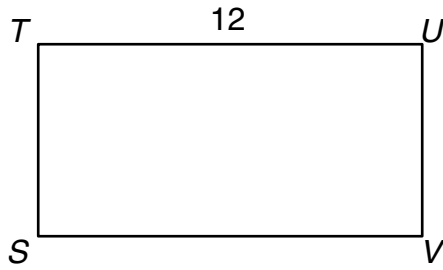
- F** The area of the slab
- G** The thickness of the slab
- H** The perimeter of the slab
- J** The price per cubic foot of concrete

27 If $\triangle XYZ$ is translated 8 units to the left and 3 units down, what are the coordinates of point Y' ?



- A (9, 5)
- B (-2, 6)
- C (1, 2)
- D (-4, 2)

- 28 Rectangle $STUV$ is similar to rectangle $LMNO$.



If the area of rectangle $STUV$ is 72 square units, what is the area of rectangle $LMNO$?

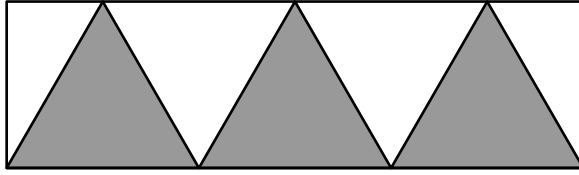
- F** 36 units²
- G** 24 units²
- H** 18 units²
- J** 12 units²

- 29 Mrs. Avery bought a 5-pound bag of white potatoes for \$4.25. If red potatoes sold for \$0.89 per pound, why did Mrs. Avery believe that she made the better buy?
- A** The number of red potatoes in a 5-pound bag is greater than the number of white potatoes in a 5-pound bag.
 - B** The cost for all kinds of potatoes in 5-pound bags is the same.
 - C** The cost per pound of white potatoes is \$0.04 less than the cost per pound of red potatoes.
 - D** The cost per pound of white potatoes is \$0.04 more than the cost per pound of red potatoes.

- 30 Fidel tosses four fair coins. What is the probability that all four coins will land heads up?

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

- 31 The figure below shows three shaded equilateral triangles inside a rectangle.



Which statement about this figure is true?

- A The shaded area is more than 50% of the area of the rectangle.
- B The shaded area is $\frac{3}{4}$ of the unshaded area of the rectangle.
- C The unshaded area is $\frac{2}{3}$ of the shaded area of the rectangle.
- D The shaded area is equal to the unshaded area of the rectangle.

- 32 In the sequence below, which expression can be used to find the value of the term in the n th position?

Position	Value of Term
1	0.25
2	0.5
3	0.75
4	1.0
5	1.25
n	

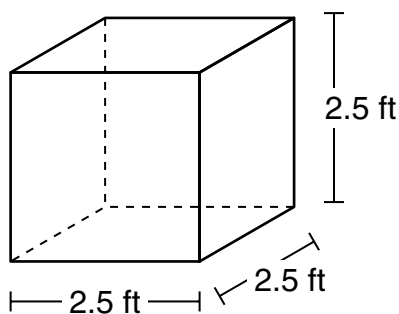
F $n - 0.75$

G $\frac{n}{4}$

H $4n$

J $n - 1.5$

- 33 Jonathan shipped a birthday gift to his grandmother in a cubical box.



Which is closest to the surface area of the box?

- A 16 square feet
B 15 square feet
C 8 square feet
D 38 square feet

- 34 On Monday Cornelius's mother gave him school money for the week. He spent \$2.80 for lunch every day for 5 school days. He paid a \$0.75 book fine at the library and bought school supplies for \$3.50. If Cornelius had \$1.75 left at the end of the school week, which expression can he use to find the amount of money he received on Monday?

F $1.75 + 5(2.80) + 3.50 + 0.75$

G $5(2.80) + 3.50 + 0.75 - 1.75$

H $1.75 + 2.80 + 0.75 + 3.50$

J $5(2.80 + 3.50 + 0.75 + 1.75)$

- 35 On Friday the low temperature in Nome, Alaska, was -12°F , and the high temperature was 23°F . How much warmer was the high temperature than the low temperature?

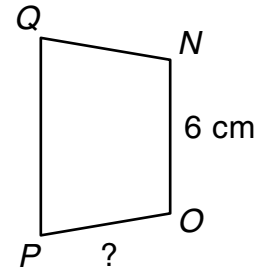
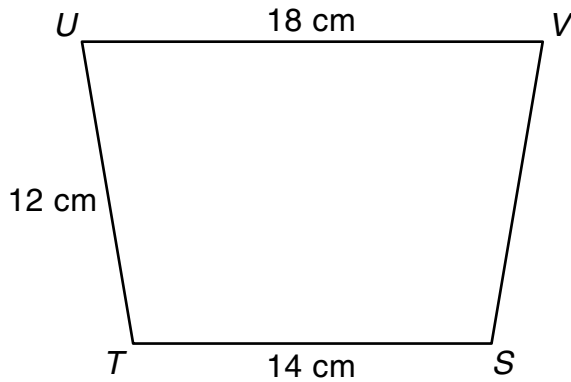
A -35°F

B -11°F

C 11°F

D 35°F

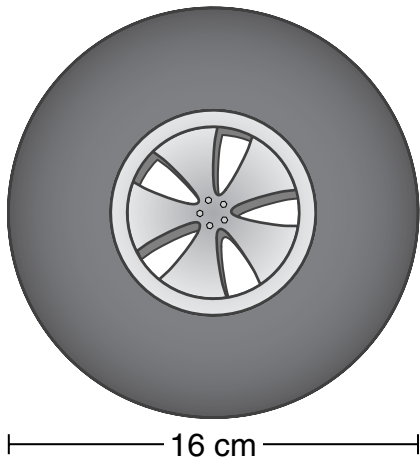
- 36 Trapezoid $STUV$ is similar to trapezoid $NOPQ$.



What is the length of \overline{OP} ?

- F** $4\frac{2}{3}$ centimeters
- G** $5\frac{1}{7}$ centimeters
- H** 28 centimeters
- J** 36 centimeters
-
- 37 The Childress family went on a camping trip. They paid \$28.00 for a 2-night stay at a campground that allows a maximum stay of 30 nights. Which equation can they use to find c , the cost of camping at this campground for the maximum number of nights?
- A** $c = 60 \cdot 56$
- B** $c = 30 \cdot 28$
- C** $c = 28 \cdot 28$
- D** $c = 30 \cdot 14$

- 38 A toy truck wheel is shown below.



Which is closest to the distance traveled during 2 full rotations of the toy truck wheel?

- F** 50.2 centimeters
G 100.5 centimeters
H 200.9 centimeters
J 401.9 centimeters
- 39 The expression shown below describes a pattern of numbers.

$$n(n - 1) + 4$$

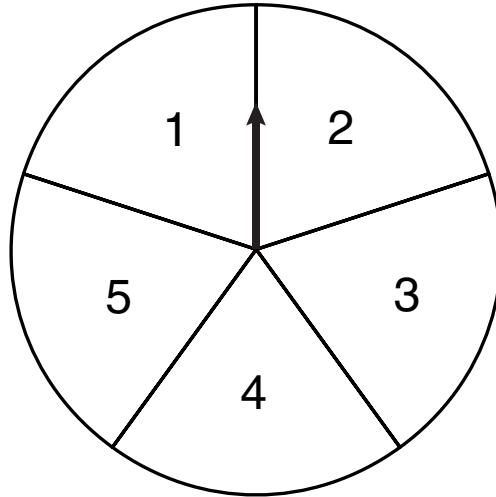
If n represents a number's position in the sequence, which pattern of numbers does the expression describe?

- A** 4, 6, 8, 10, 12, ...
B 1, 4, 6, 10, 16, ...
C 4, 6, 10, 16, 24, ...
D 4, 10, 18, 28, 40, ...

- 40 Carlos, Jackie, Lester, and Margie ate lunch at a restaurant. The total amount of the bill, including tax and tip, was \$44.60. Carlos paid \$15.00, Jackie paid $\frac{1}{4}$ of the bill, Lester paid 20% of the bill, and Margie paid the rest of the bill. Who paid the greatest part of the bill?

- F** Carlos
G Jackie
H Lester
J Margie

41 Valdemar has a spinner like the one shown below.



Valdemar would like to increase the chances of the following events:

- Spinning an even number
- Spinning a number less than 4
- Spinning the square root of 9

Valdemar decides to remove the 5 from the spinner. Which statement best supports his reasoning?

- A The number 5 takes up more space on the spinner.
- B Spinning the number 5 has the greatest probability.
- C The number 5 is the greatest number.
- D Spinning the number 5 is not a desired event.

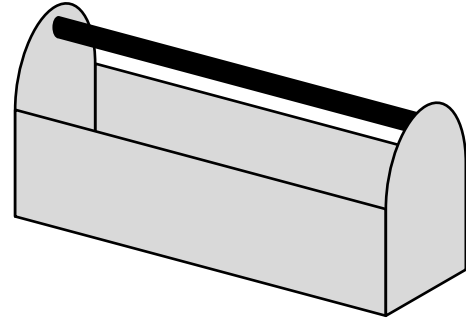
42 Mr. Harrington wrote four irrational numbers on the board and asked Jared to choose the number closest to 3. Which irrational number should Jared choose?

- F $\sqrt{6}$
- G $\sqrt{10}$
- H $\sqrt{12}$
- J $\sqrt{14}$

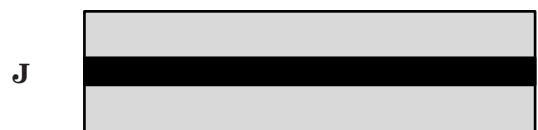
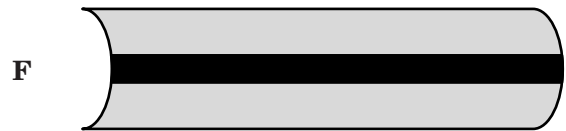
43 The sun's core temperature reaches close to 2.7×10^7 degrees Fahrenheit. Which of the following represents this temperature in standard notation?

- A 270,000°F
- B 2,700,000°F
- C 27,000,000°F
- D 270,000,000°F

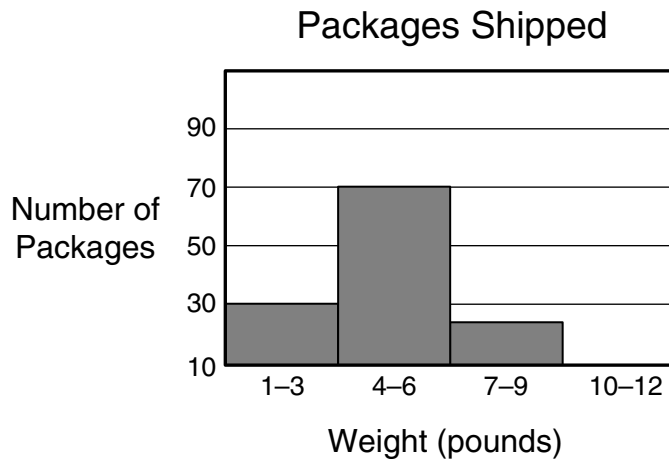
44 The picture below shows a toolbox with a black handle.



Which drawing best represents a top view of the toolbox?



- 45 The graph below displays the weights of packages shipped from a post office on Tuesday.



According to information in the graph, no 10- to 12-pound packages were shipped. Which statement explains why this representation may be inaccurate?

- A The scale for the number of packages does not start at 0.
- B The vertical bars are too wide.
- C The intervals are too small.
- D The scale for the number of packages goes higher than 90.

- 46 Mr. Polanco purchased 12 boxes of tile. Each box contained 15 square tiles. If Mr. Polanco wants to tile the wall 14 tiles high and 13 tiles long, which procedure can he use to determine whether he has enough tiles to complete the job?

- F Multiply 14 by 12
- G Subtract 14 from 15 and then multiply by 12
- H Multiply 12 by 15 and then compare the product with the product of 13 and 14
- J Add 15 and 14 and then multiply by 13

47 A gift basket contains $6\frac{2}{3}$ ounces of chocolate candy, $4\frac{1}{2}$ ounces of hard candy, and 4 ounces of dried fruit. What is the total weight of the contents of the gift basket?

A $11\frac{1}{6}$ oz

B $14\frac{1}{2}$ oz

C $14\frac{3}{5}$ oz

D $15\frac{1}{6}$ oz

48 The Wright Pen Company sells 3-pen packages for \$1.50. Which company sells pens for the same price per pen?

F Jones Pen Company
4-pen packages for \$2.50

G Cavazos Pen Company
5-pen packages for \$3.00

H Smother Pen Company
7-pen packages for \$3.50

J Nottingham Pen Company
9-pen packages for \$5.00

49 The probability of a table-tennis ball being defective is $\frac{1}{10}$. About how many balls would be defective in a case of 725 table-tennis balls?

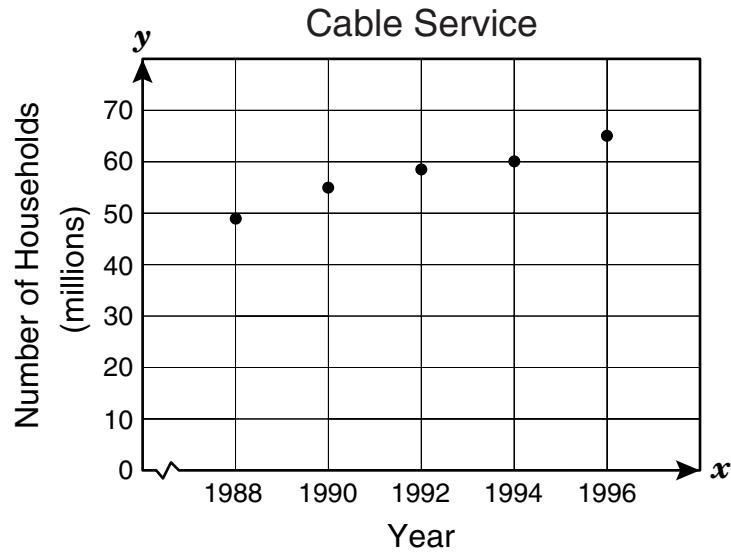
A 1

B 7

C 73

D 80

- 50 The scatterplot below shows the number of households with cable television service during certain years.



Which statement best describes the relationship on the scatterplot?

- F** The number of households with cable service increased over time.
- G** The number of households with cable service decreased over time.
- H** The number of households with cable service remained the same over time.
- J** The number of households with cable service could not be determined over time.

