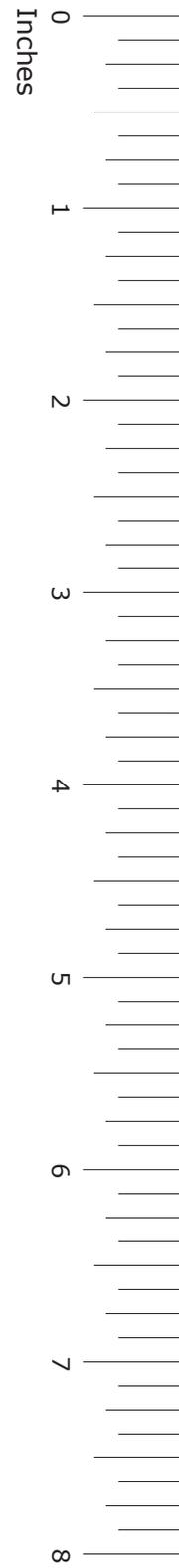


GRADE 4
Mathematics

Administered April 2013

RELEASED

STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS



LENGTH

Customary

1 mile (mi) = 1,760 yards (yd)

1 yard (yd) = 3 feet (ft)

1 foot (ft) = 12 inches (in.)

Metric

1 kilometer (km) = 1,000 meters (m)

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary

1 gallon (gal) = 4 quarts (qt)

1 quart (qt) = 2 pints (pt)

1 pint (pt) = 2 cups (c)

1 cup (c) = 8 fluid ounces (fl oz)

Metric

1 liter (L) = 1,000 milliliters (mL)

WEIGHT AND MASS

Customary

1 ton (T) = 2,000 pounds (lb)

1 pound (lb) = 16 ounces (oz)

Metric

1 kilogram (kg) = 1,000 grams (g)

1 gram (g) = 1,000 milligrams (mg)

TIME

1 year = 12 months

1 year = 52 weeks

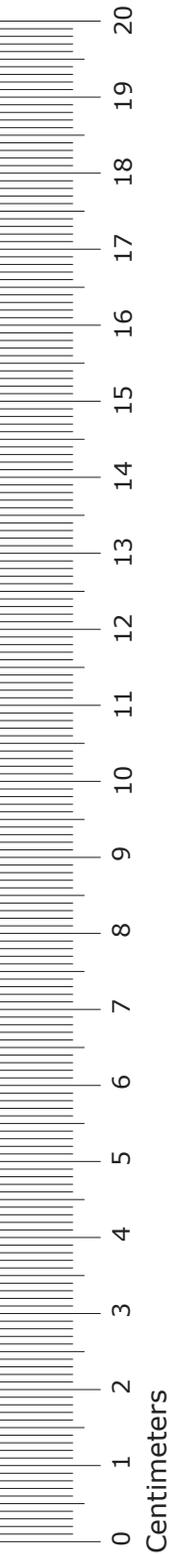
1 week = 7 days

1 day = 24 hours

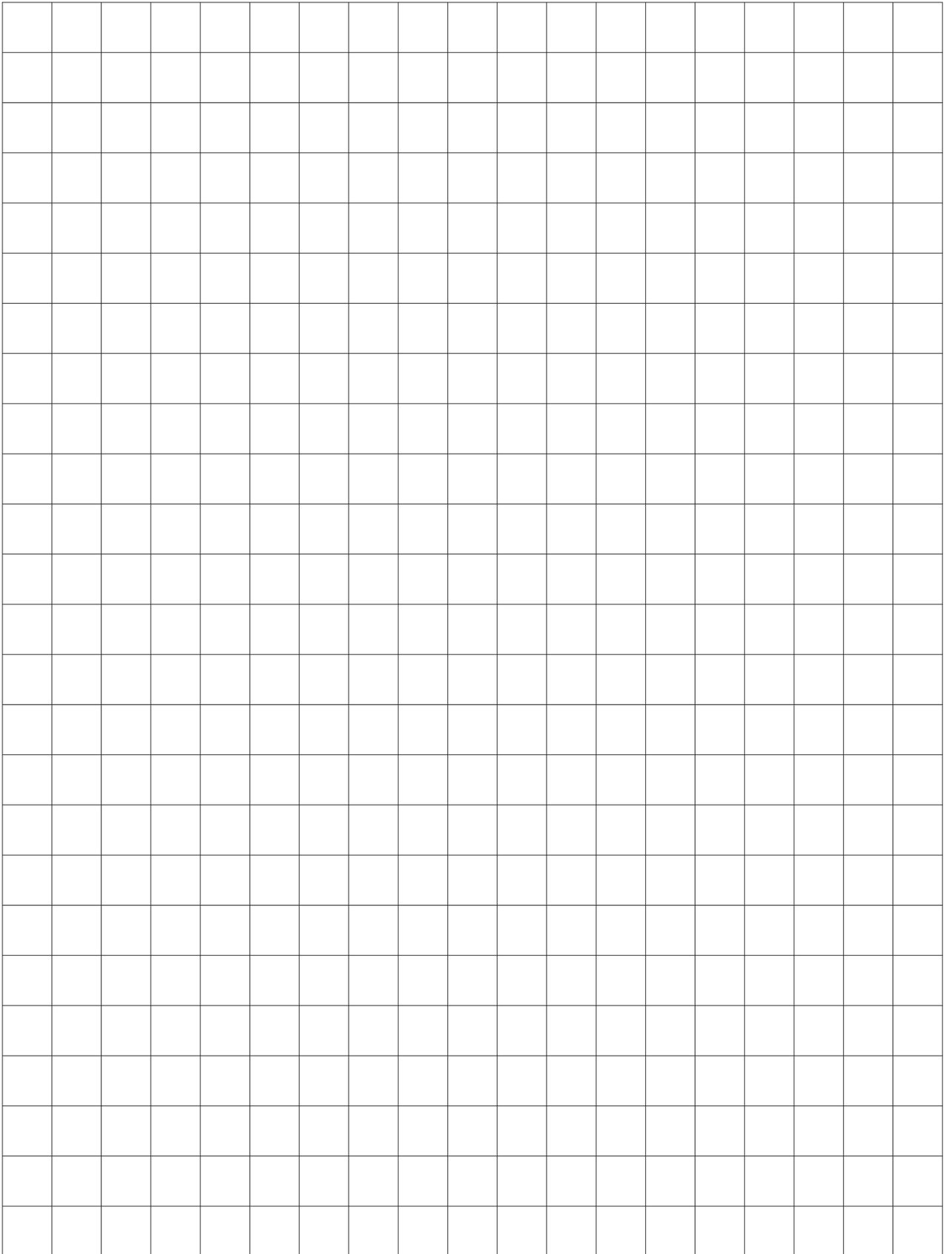
1 hour = 60 minutes

1 minute = 60 seconds

STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS



This page shows only
the metric ruler.

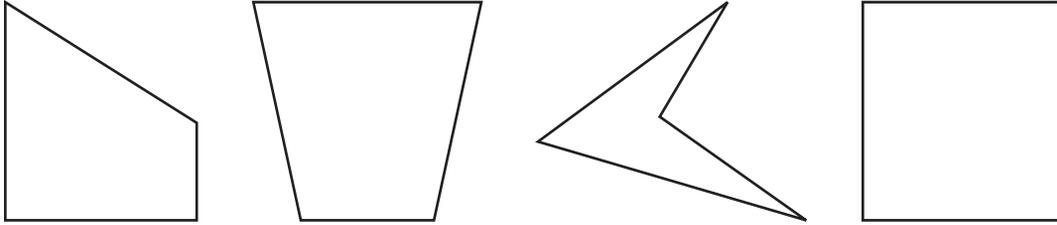


MATHEMATICS

DIRECTIONS

Read each question carefully. For a multiple-choice question, determine the best answer to the question from the four answer choices provided. For a griddable question, determine the best answer to the question. Then fill in the answer on your answer document.

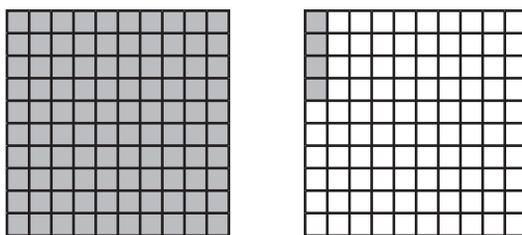
- 1 The figures below share a characteristic.



Which statement best describes these figures?

- A They are all trapezoids.
- B They are all rectangles.
- C They are all squares.
- D They are all quadrilaterals.

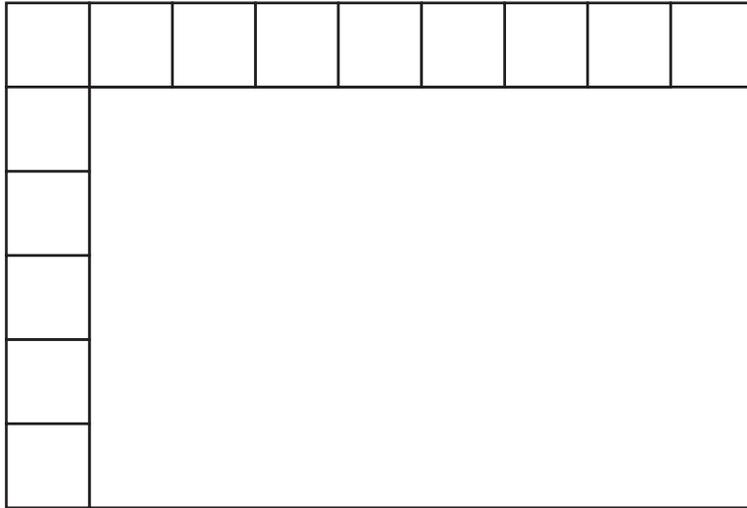
- 2 The model below is shaded to represent $1\frac{4}{100}$.



Which decimal does the model represent?

- F** 1.04
- G** 1.4
- H** 14.0
- J** 1.004

3 The model below represents the length and width of a rectangular exercise mat.



 = 1 square meter

What is the area of this mat in square meters?

- A** 15 square meters
- B** 45 square meters
- C** 54 square meters
- D** 30 square meters

4 Inez is 12 years younger than Raúl. Raúl is 6 years older than Kaylee. Kaylee is twice as old as Henry. Henry is 5 years old. What is the combined age of these four people?

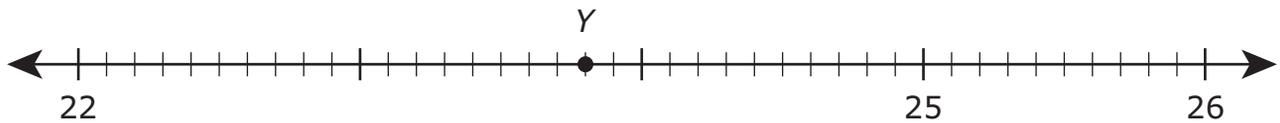
F 35 years

G 59 years

H 45 years

J 26 years

5 Which number does point Y best represent on the number line below?



A 24.8

B 23.2

C 24.2

D 23.8

6 A number sentence is shown below.

$$\square \times 25 = \bigcirc$$

Which table shows numbers that correctly complete the number sentence?

F

<input type="checkbox"/>	3	5	7	9
<input type="radio"/>	75	125	175	200

H

<input type="checkbox"/>	3	5	7	9
<input type="radio"/>	75	100	125	150

G

<input type="checkbox"/>	3	5	7	9
<input type="radio"/>	25	50	75	100

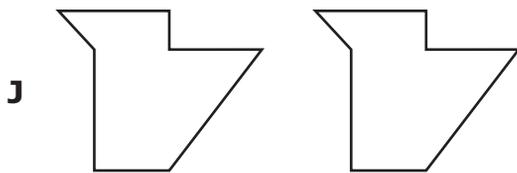
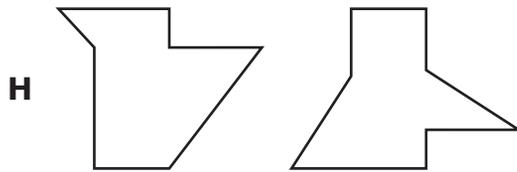
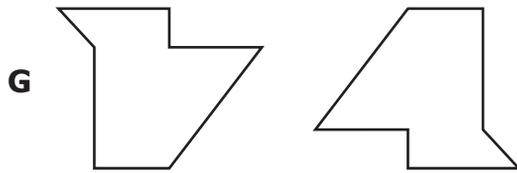
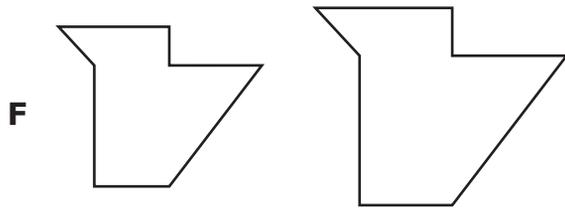
J

<input type="checkbox"/>	3	5	7	9
<input type="radio"/>	75	125	175	225

7 Each picture below represents a different amount of money. In which amount of money is the digit 9 in the hundredths place?



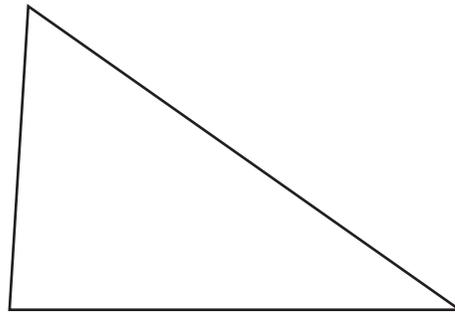
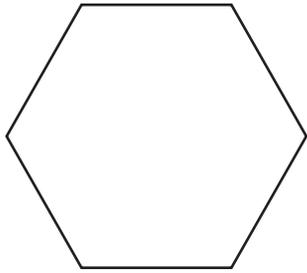
8 Which pair of figures shows only a translation?



9 Terrell spent \$306 on a television and 3 video games. He spent \$243 on the television. Each video game was the same price. How much did Terrell spend on each video game?

- A \$21, because $306 - 243 = 63$ and $63 \div 3 = 21$
- B \$1,647, because $306 + 243 = 549$ and $549 \times 3 = 1,647$
- C \$183, because $306 + 243 = 549$ and $549 \div 3 = 183$
- D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$

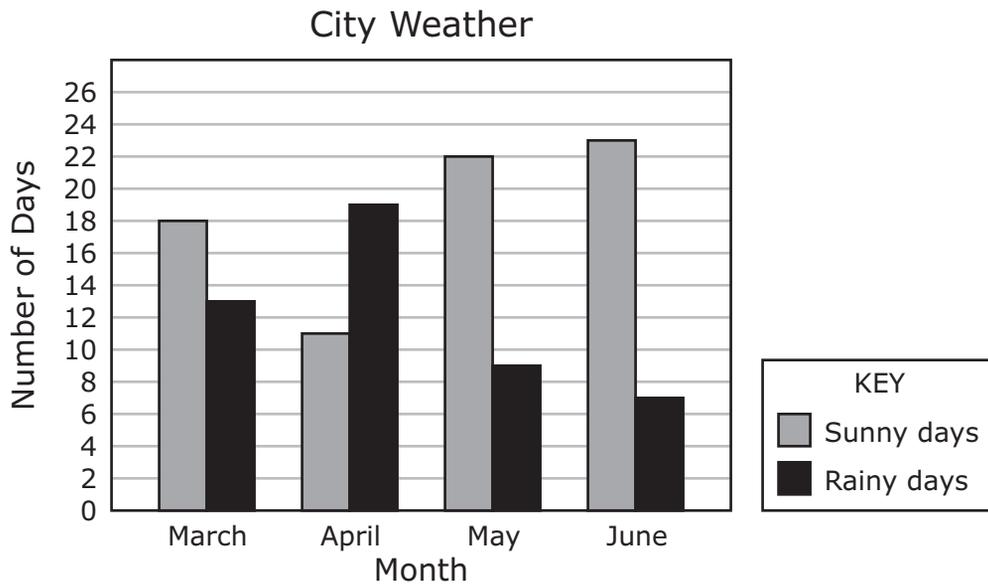
- 10** Use the ruler provided to measure the side lengths of the figures below to the nearest centimeter.



What is the difference between the perimeters of these figures?

- F** 2 cm
- G** 9 cm
- H** 29 cm
- J** 5 cm

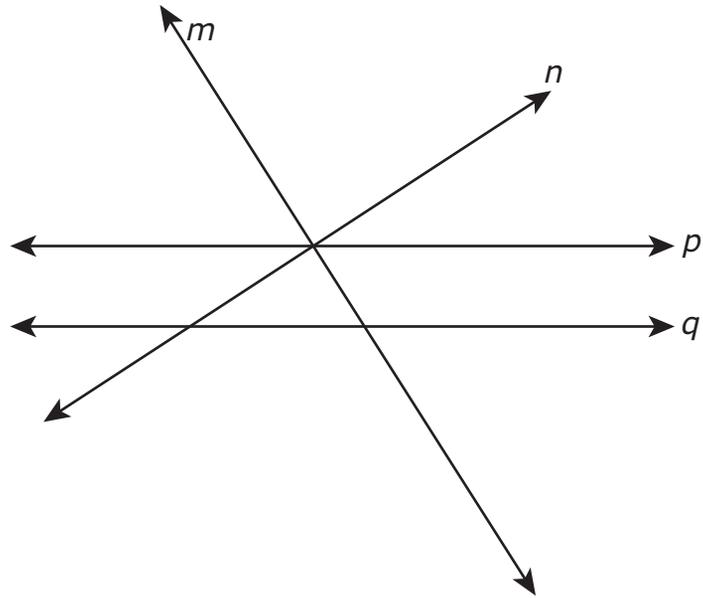
- 11** The graph below shows the number of sunny days and rainy days in a city during four months.



Based on the graph, how many more sunny days than rainy days did this city have during the months of April, May, and June?

- A** 21
- B** 56
- C** 26
- D** 20

12 A group of lines is shown below.



Which two lines appear to be perpendicular?

- F** Lines m and p
- G** Lines p and q
- H** Lines m and n
- J** Lines n and q

13 The list below shows the number of picture frames Shelly sold on each day of an art sale.

- She sold 16 picture frames on Thursday.
- She sold 22 picture frames on Friday.
- She sold 25 picture frames on Saturday.

The cost of each picture frame was \$14. What was the total cost of these picture frames in dollars?

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

14 Laura separated her puzzles into 2 groups. Each group had 5 puzzles. Which number sentence **CANNOT** be used to find the number of puzzles in these two groups?

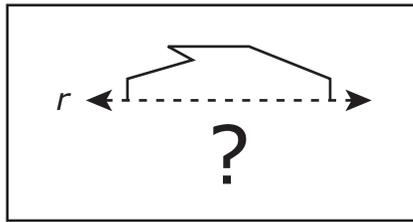
F $\square \div 2 = 5$

G $\square + 2 = 5$

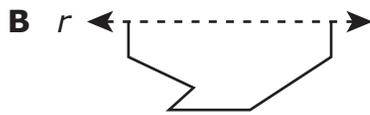
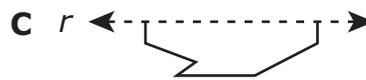
H $5 \times 2 = \square$

J $2 \times 5 = \square$

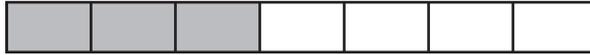
- 15** The top part of a figure is shown. The bottom part of the figure is missing. Line r is a line of symmetry.



Which of the following shows the bottom part of the figure?



16 The models below are shaded to represent two different fractions.



Which statement is true?

F $\frac{3}{7} > \frac{7}{12}$

G $\frac{3}{4} < \frac{7}{12}$

H $\frac{3}{7} < \frac{7}{12}$

J $\frac{4}{7} > \frac{5}{7}$

- 17** Each player in a game will roll a number cube and spin the arrow on a spinner one time. The numbers on each face of the number cube and the shapes on the spinner are shown below.

Numbers

1

2

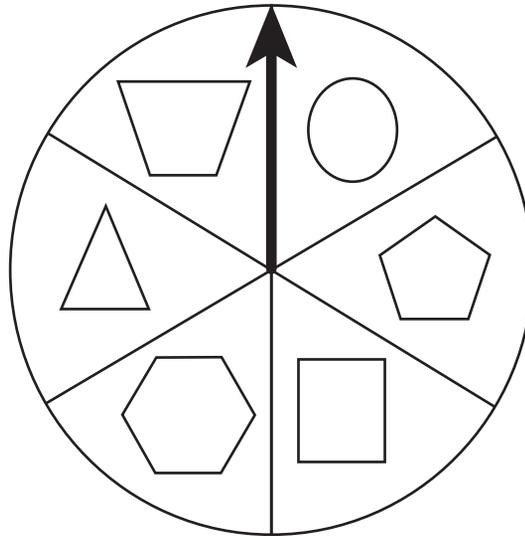
3

4

5

6

Shapes



How many different combinations of 1 odd number and 1 shape are possible?

- A** 18
- B** 12
- C** 9
- D** 36

- 18** A total of 7,093,502 people watched a soccer game on television. Which of the following has the same value as 7,093,502?
- F** $7,000,000 + 900,000 + 30,000 + 5,000 + 200$
 - G** $7,000,000 + 90,000 + 3,000 + 50 + 2$
 - H** $7,000,000 + 900,000 + 3,000 + 500 + 2$
 - J** $7,000,000 + 90,000 + 3,000 + 500 + 2$

-
- 19** Mrs. Taylor wants to pour 8 quarts of juice into 16 glasses. Each glass holds one pint. Does Mrs. Taylor have enough juice to fill 16 glasses?
- A** No, because there are 4 quarts in 1 gallon and $16 \div 4 = 4$
 - B** No, because there are 4 quarts in 1 gallon and $4 \times 16 = 64$
 - C** Yes, because there are 2 pints in 1 quart and $2 \times 8 = 16$
 - D** Yes, because there are 2 pints in 1 quart and $8 \div 2 = 4$

- 20** The table below shows the amount of money Hector earned and spent during each of four months.

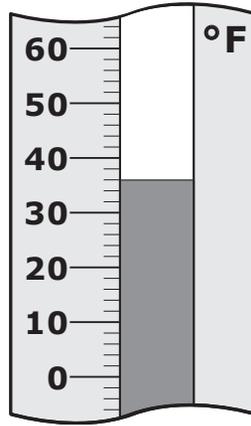
Hector's Money

Month	Amount Earned	Amount Spent
May	\$27	\$12
June	\$39	\$24
July	\$46	\$31
August	\$43	\$28

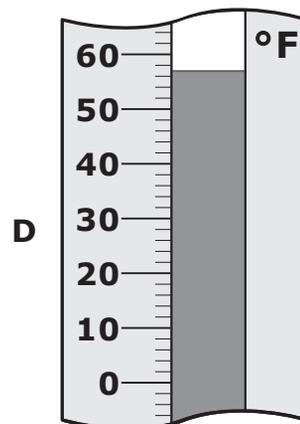
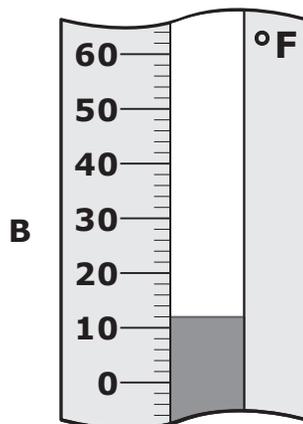
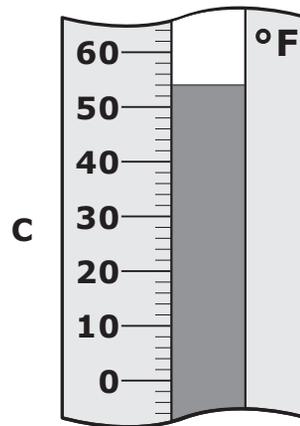
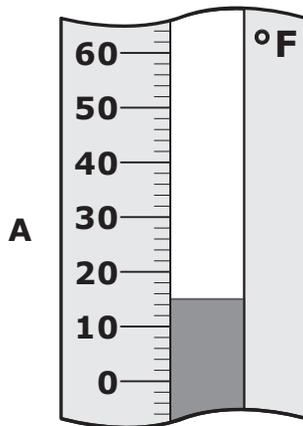
Which of the following describes the relationship in the table?

- F** Amount spent + 12 = amount earned
- G** Amount spent \times 2 = amount earned
- H** Amount spent + 15 = amount earned
- J** Amount spent $-$ 15 = amount earned

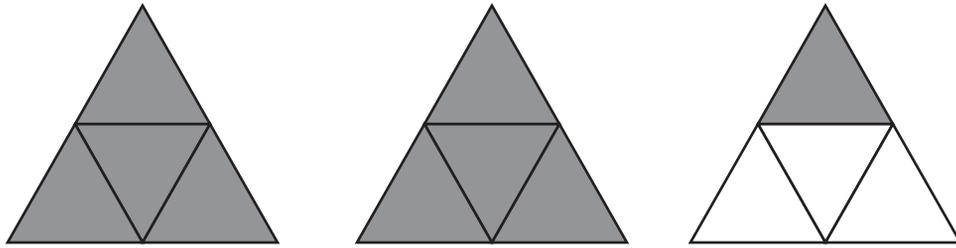
21 The thermometer below shows the temperature of some milk in a pan.



The milk was heated until the temperature increased 21°F . Which thermometer shows the temperature of the milk after it was heated?



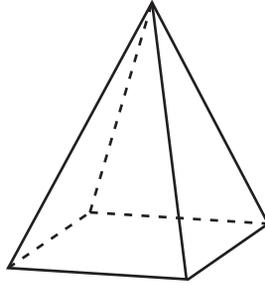
22 The model below is shaded to represent a fraction greater than 1.



Which fraction is represented by the model?

- F** $\frac{9}{4}$, because 9 sections are shaded and each figure is divided into 4 equal sections
- G** $\frac{9}{3}$, because there are 3 figures and 9 sections are shaded
- H** $\frac{9}{12}$, because 9 sections are shaded and there are a total of 12 sections
- J** $\frac{9}{2}$, because 9 sections are shaded and 2 figures are completely shaded

23 A three-dimensional figure is shown below.



How many more edges than faces does this figure have?

- A** 3
- B** 8
- C** 5
- D** 4

24 The picture below shows the number of prizes that were in 5 treasure chests.



54
prizes



31
prizes



47
prizes



64
prizes



56
prizes

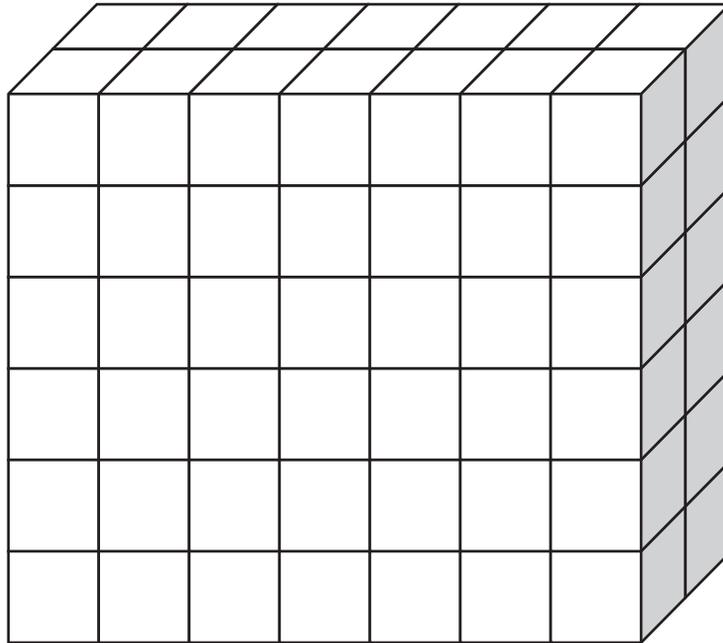
Mr. Washington opened the chests and put all the prizes into 7 equal groups. How many prizes did Mr. Washington put into each group?

- F** 34
- G** 1,764
- H** 36
- J** 252

25 A season pass at a water park costs \$100. A total of 125 people paid for a season pass. What was the total cost of these season passes?

- A** \$225
- B** \$12,500
- C** \$12,005
- D** \$1,250

26 The model below is made with 1-unit cubes.



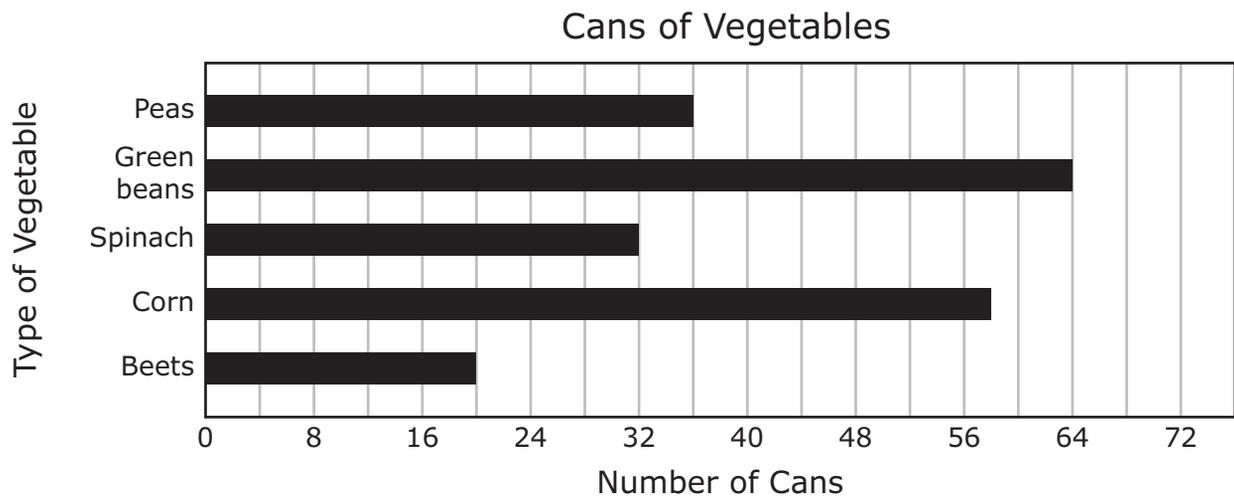
What is the volume of this model in cubic units?

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

27 Nathan washes 26 cars each day he works at a car wash. He worked 34 days during the summer. About how many cars did Nathan wash during these 34 days?

- A** 900
- B** 600
- C** 1,800
- D** 1,200

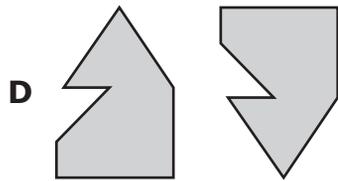
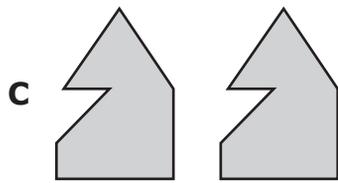
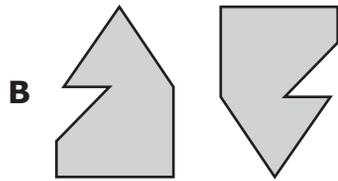
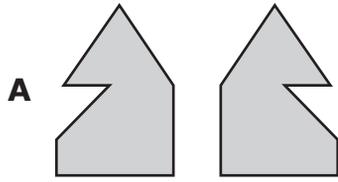
- 28** The graph below shows the number of cans of different types of vegetables on a grocery store shelf.



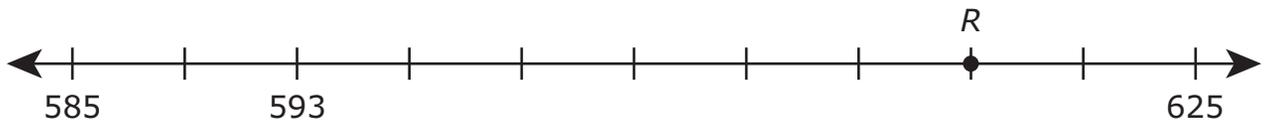
Based on the graph, how many more cans of corn than cans of peas are on the shelf?

- F** 20, because $60 - 40 = 20$
- G** 16, because $50 - 40 = 16$
- H** 28, because $64 - 36 = 28$
- J** 22, because $58 - 36 = 22$

29 Which pair of figures shows only a rotation?



30 Which number does point *R* best represent on the number line below?



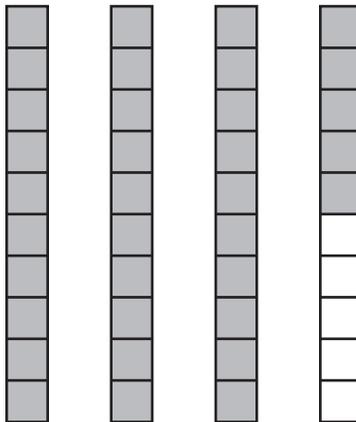
F 617

G 599

H 623

J 609

31 The model below is shaded to represent a number greater than 1.



Which fraction and decimal represent this number?

A $\frac{35}{100}$ and 0.35

B $3\frac{5}{10}$ and 3.5

C $3\frac{5}{100}$ and 3.5

D $3\frac{5}{10}$ and 3.05

- 32** The pull of gravity on Venus is different from the pull of gravity on Mercury. Which statement about an object on Venus and the same object on Mercury is true?
- F** The mass of the object would be different on each planet, because mass changes according to the pull of gravity.
 - G** The height of the object would be different on each planet, because height changes according to the pull of gravity.
 - H** The weight of the object would be different on each planet, because weight changes according to the pull of gravity.
 - J** The length of the object would be different on each planet, because length changes according to the pull of gravity.

- 33** The table below shows the total number of computers in different numbers of classrooms in a school.

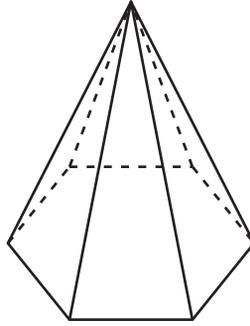
School Computers

Total Number of Computers	Number of Classrooms
105	15
84	12
42	6
21	3

Which of the following describes the relationship in the table?

- A** Total number of computers $- 19 =$ number of classrooms
- B** Total number of computers $\div 3 =$ number of classrooms
- C** Total number of computers $- 90 =$ number of classrooms
- D** Total number of computers $\div 7 =$ number of classrooms

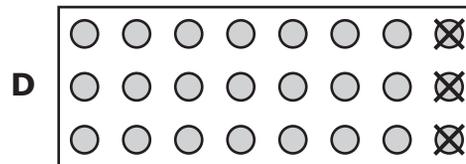
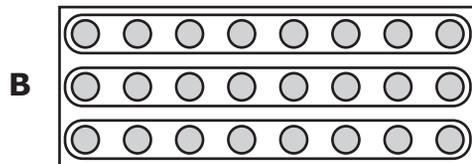
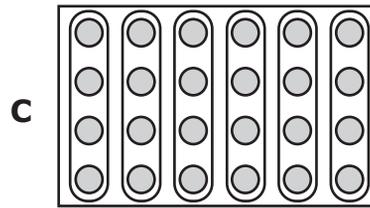
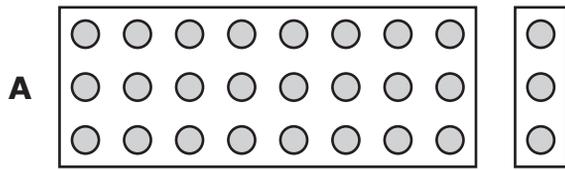
34 A three-dimensional figure is shown below.



What is the total number of edges and vertices in this figure?

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

35 Which model represents the expression $24 \div 3$?



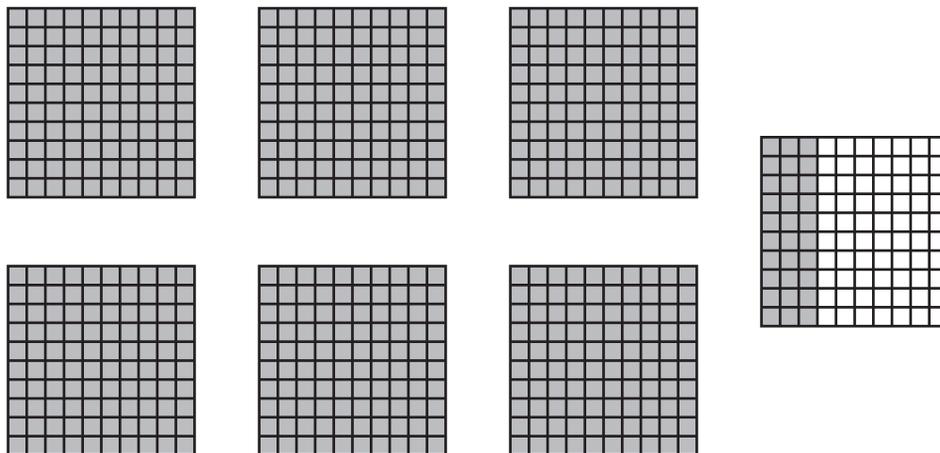
- 36** Zia is buying a T-shirt for her brother. Her choices of teams, colors, and sizes are shown below.

Teams	Colors	Sizes
Lions	Green	Small
Panthers	Black	Medium
Owls	Purple	Large
Eagles	Yellow	

How many different combinations of 1 team, 1 color, and 1 size are possible?

- F** 64
- G** 11
- H** 48
- J** 16

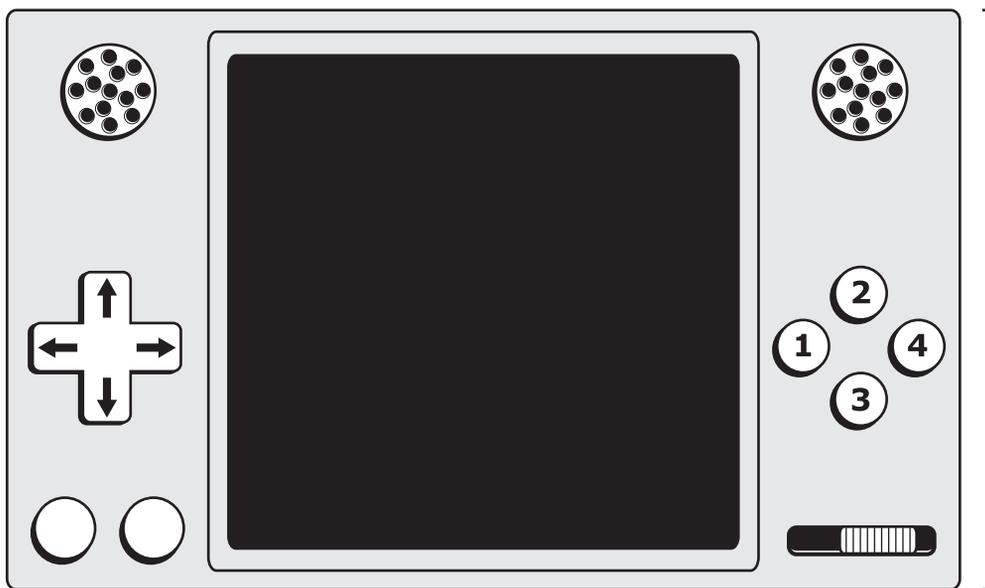
37 The model below is shaded to represent a decimal.



How is this decimal written in words?

- A** Six and thirty hundredths
- B** Six hundred three
- C** Six and thirty tenths
- D** Six and three hundredths

- 38** Benito has 4 video-game players like the one shown below. The line segment represents the width of the video-game player.

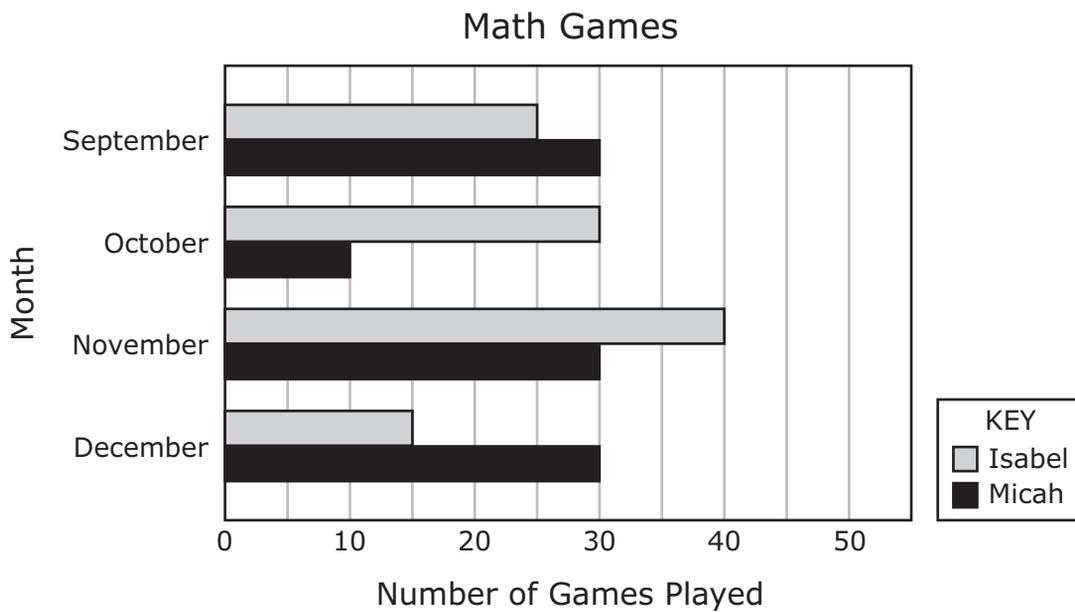


Use the ruler provided to measure the line segment beside the video-game player to the nearest inch. What is the total width of the 4 video-game players?

- F** 3 in.
- G** 16 in.
- H** 12 in.
- J** 4 in.

- 39** There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers?
- A** 234 qt
 - B** 936 qt
 - C** 1,026 qt
 - D** 836 qt

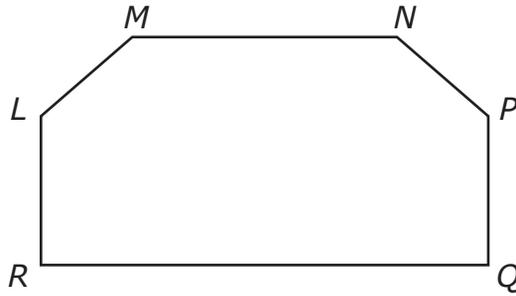
- 40** The graph below shows the number of math games two people played on a computer during four months.



Based on the graph, which statement is true?

- F** In September Micah played 5 fewer games than Isabel.
 - G** In October Isabel played 4 times as many games as Micah.
 - H** In November Isabel played 2 more games than Micah.
 - J** In December Micah played 2 times as many games as Isabel.
-
- 41** Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower?
- A** 65
 - B** 63
 - C** 61
 - D** 79

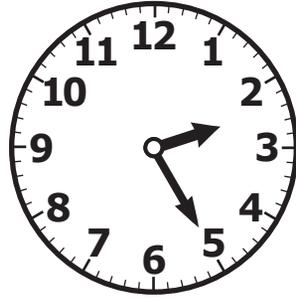
42 The figure below has 6 labeled angles.



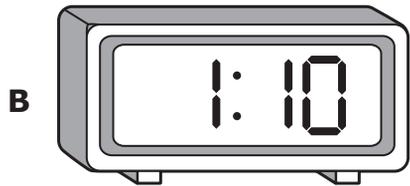
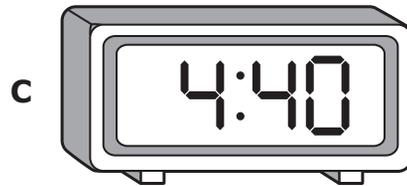
Which list shows only the angles that appear to be right angles?

- F** Angle L , angle M , angle N , and angle P
- G** Angle L , angle P , angle Q , and angle R
- H** Angle Q and angle R
- J** Angle M and angle N

43 The clock below shows the time Vicente's football practice began.



Football practice lasted 1 hour 15 minutes. Which digital clock shows the time football practice ended?



44 The table below shows two related sets of numbers.

	
60	20
45	15
33	11
9	3

Which of the following describes the relationship in the table?

F  - 15 = 

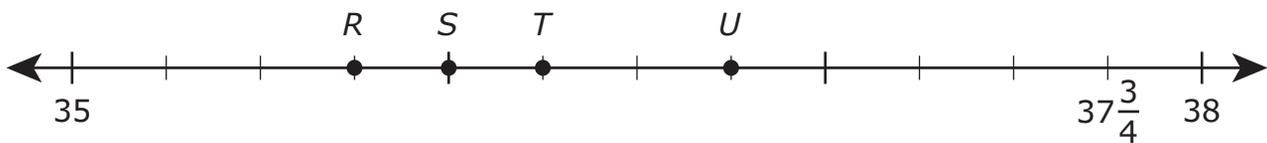
G  \div 3 = 

H  - 40 = 

J  \div 6 = 

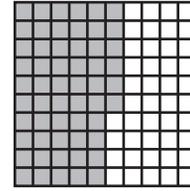
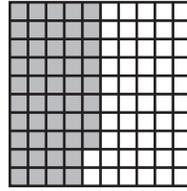
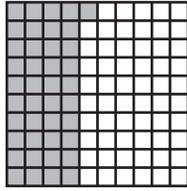
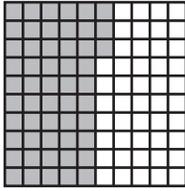
- 45** Ms. López bought 5 packages of crackers at a store. Each package had 8 crackers. What was the total number of crackers in these 5 packages?
- A** 25
 - B** 13
 - C** 35
 - D** Not here

-
- 46** Which point best represents $36\frac{1}{4}$ on the number line below?



- F** Point *R*
- G** Point *S*
- H** Point *T*
- J** Point *U*

47 The shaded models below represent four different decimal numbers.



Which list shows these decimal numbers in order from least to greatest?

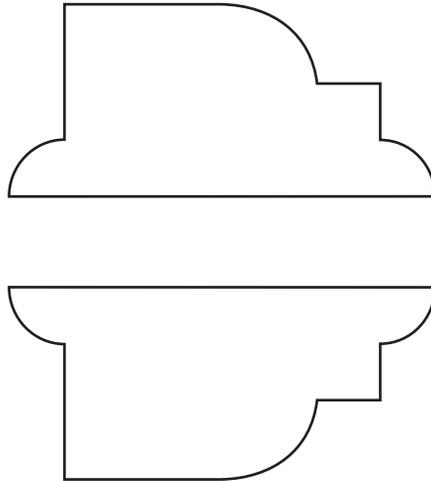
A 0.53 0.41 0.48 0.56

B 0.41 0.48 0.53 0.56

C 0.56 0.53 0.48 0.41

D 0.41 0.53 0.56 0.48

48 Which single transformation is shown below?



- F** Rotation
- G** Translation
- H** Reflection
- J** No transformation is shown.



**STAAR
GRADE 4
Mathematics
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