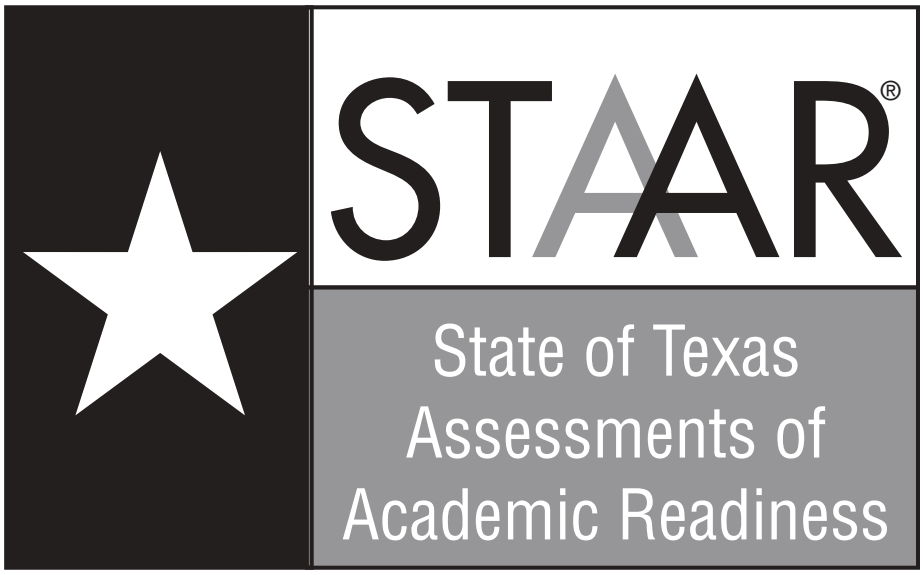


GRADE 5

Mathematics

Administered April 2019

RELEASED

STAAR GRADE 5 MATHEMATICS REFERENCE MATERIALS

PERIMETER

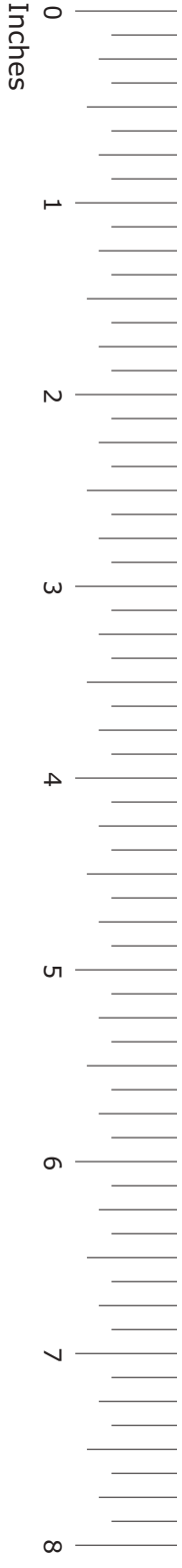
Square			$P = 4s$
Rectangle			$P = 2l + 2w$

AREA

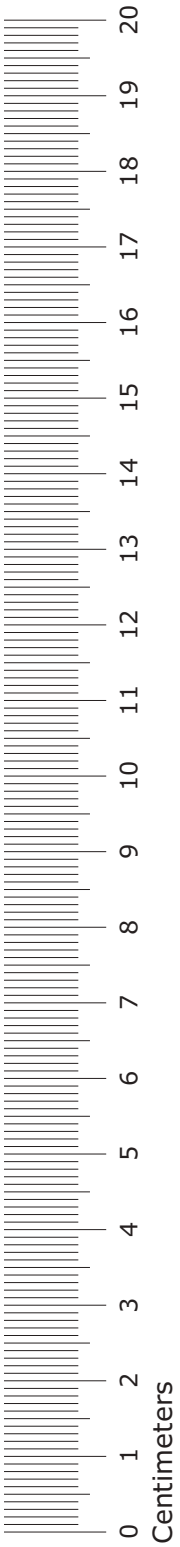
Square			$A = s \times s$
Rectangle	$A = l \times w$	or	$A = bh$

VOLUME

Cube			$V = s \times s \times s$
Rectangular prism	$V = l \times w \times h$	or	$V = Bh$



STAAR GRADE 5 MATHEMATICS REFERENCE MATERIALS



LENGTH

Customary	Metric
1 mile (mi) = 1,760 yards (yd)	1 kilometer (km) = 1,000 meters (m)
1 yard (yd) = 3 feet (ft)	1 meter (m) = 100 centimeters (cm)
1 foot (ft) = 12 inches (in.)	1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary	Metric
1 gallon (gal) = 4 quarts (qt)	1 liter (L) = 1,000 milliliters (mL)
1 quart (qt) = 2 pints (pt)	
1 pint (pt) = 2 cups (c)	
1 cup (c) = 8 fluid ounces (fl oz)	

WEIGHT AND MASS

Customary	Metric
1 ton (T) = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)

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 A pet store owner will order dog beds for his shop. The relationship between x, the number of boxes he will order, and y, the number of dog beds he will receive, can be represented by the equation $y = 12x$.

Which table contains only values that represent the equation?

A

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
3	36
6	72
9	108
15	180

B

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
2	14
6	18
10	22
14	26

C

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
3	36
6	72
9	108
15	144

D

Dog Beds

Number of Boxes, x	Number of Dog Beds, y
2	24
6	36
10	48
14	60

2 Rebecca bought air filters at a store.

- She bought 8 air filters.
- Each air filter cost $16.95.
- Rebecca used a coupon for $7.50 off her total cost of the air filters.

The total cost in dollars that Rebecca paid for these 8 air filters can be represented by this expression.

$$(8 \times 16.95) - 7.50$$

How much did Rebecca pay for these 8 air filters?

F $80.70

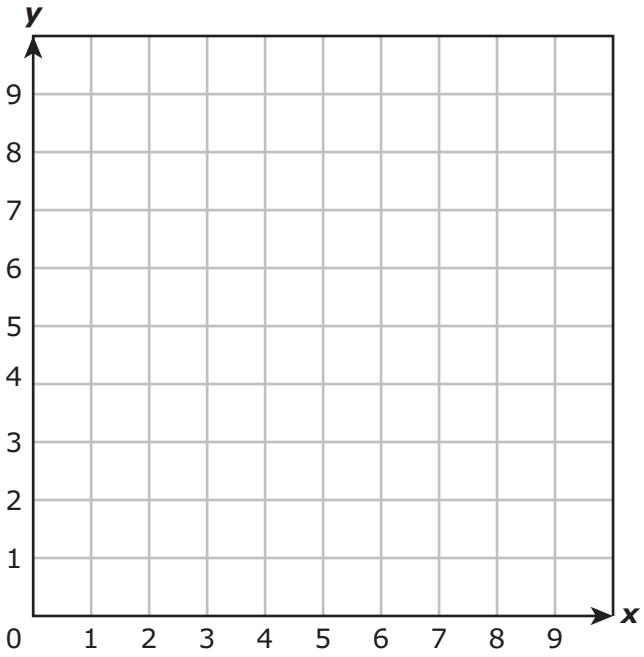
G $143.10

H $128.10

J $75.60

3 Jim plotted the following ordered pairs on a coordinate grid.

(1, 3) (3, 6) (7, 6) (9, 3)



Jim connected the points with line segments to form a polygon. Which point is located inside the polygon?

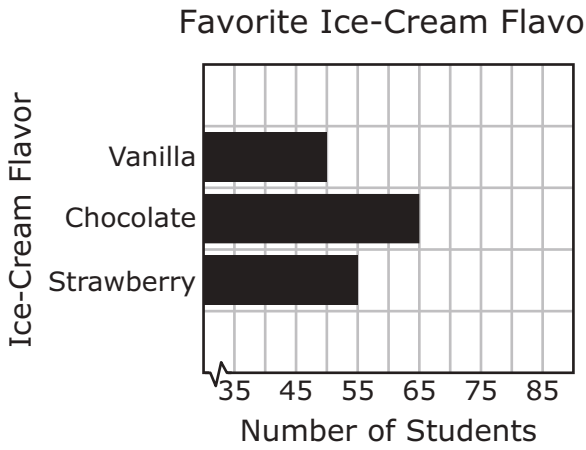
A (4, 5)

B (8, 6)

C (5, 7)

D (3, 1)

4 The fifth-grade students at Oakwood Elementary School recorded their favorite ice-cream flavor on the graph shown.



How many students did not pick strawberry as their favorite ice-cream flavor?

F 55

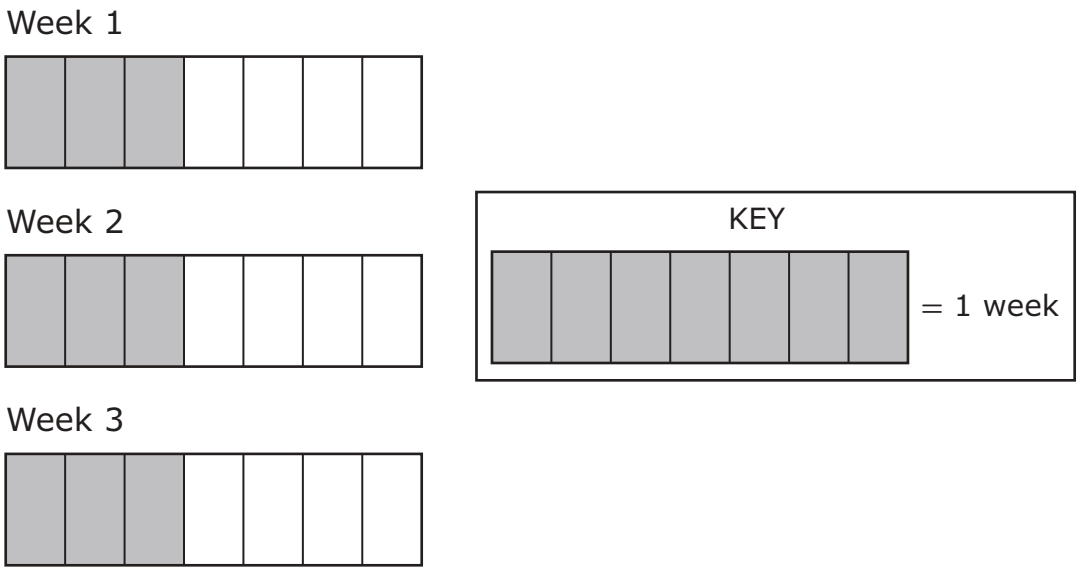
G 120

H 125

J 115

GO ON

5 Darenda worked for 3 weeks. The shaded parts of the model represent the fraction of each week she worked from her home office.



Which expression can be used to determine the number of weeks Darenda worked from her home office over these 3 weeks?

A $3 + \frac{3}{4}$

B $3 + \frac{3}{7}$

C $3 \times \frac{3}{4}$

D $3 \times \frac{3}{7}$

---

6 What is 0.64 rounded to the tenths place?

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

7 Ms. Jaffey had a total of 428.5 ounces of pretzels to put into 5 bowls for a party. She put an equal number of ounces of pretzels into each bowl.

How many ounces of pretzels did Ms. Jaffey put into each bowl?

A 85.7 oz

B 97.7 oz

C 80.0 oz

D 85.3 oz

---

8 Jacob wrote the expression shown.

$$10 \div 5 + 4(72 - 6)$$

What do these parentheses indicate in the expression?

F Divide 10 by 5 before adding 4

G Multiply 4 by 72 before subtracting 6

H Add 5 and 4 together before subtracting 6 from 72

J Subtract 6 from 72 before multiplying by 4

9 The owner of a snow-cone stand used $\frac{1}{4}$ gallon of syrup to make 16 cherry snow cones. She used the same amount of syrup in each snow cone.

How much syrup in gallons was used in each cherry snow cone?

A $\frac{1}{4}$ gal

B 4 gal

C $\frac{1}{64}$ gal

D 64 gal

---

10 Cheyenne works 15 hours a week at the movie theater. She earns $8 an hour.

Which statement about her weekly income is true?

F Her net income is more than $120.

G Her gross income is less than $120.

H Her net income is less than $120.

J Her gross income is more than $120.

11 Three friends rode their bikes last week.

- Christine rode her bike 27 kilometers.
- Philip rode his bike 12 kilometers less than Christine.
- Nathan rode his bike 3 times as far as Philip.

Which equation represents n, the distance in kilometers Nathan rode his bike?

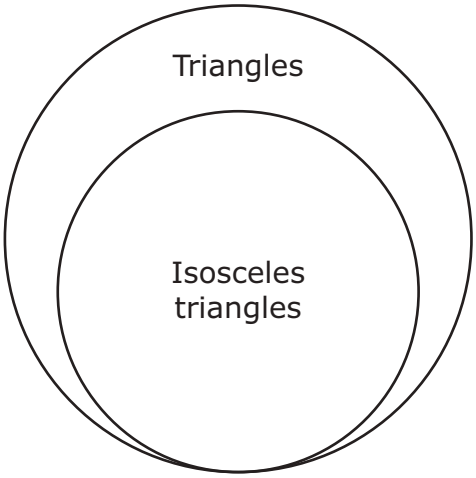
A $(27 + 12) \div 3 = n$

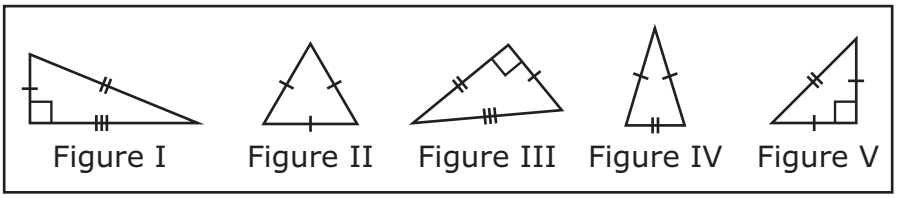
B $(27 - 12) \times 3 = n$

C $(27 - 12) \div 3 = n$

D $(27 + 12) \times 3 = n$

12 A student used this graphic organizer to classify different figures.





Which figures belong in the part of the organizer labeled "Isosceles triangles"?

F Figures II and V only

G Figures I, III, and V only

H Figures I and III only

J Figures II, IV, and V only

---

13 Dion ran 3.75 kilometers each day to prepare for a race. What was the number of kilometers that Dion ran during 28 days?

A 10.5 km

B 105 km

C 1,875 km

D 18.75 km

14 Four students are traveling to a math contest. The table shows the weights of the four students' suitcases.

Weights of Suitcases

Student	Weight of Suitcase (pounds)
Juan	21.605
Tiana	24.8
Kimberly	21.48
Emanuel	24.75

In what position would Juan's suitcase be if the weights of the suitcases in pounds were ordered from greatest to least?

F First

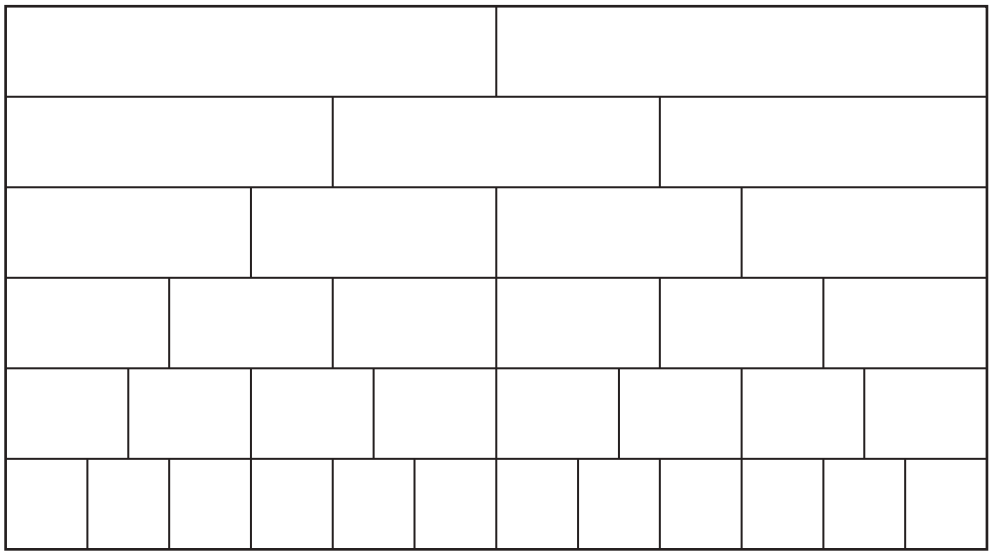
G Second

H Third

J Fourth

15 Vanna used the fraction strips shown to help her determine the difference between $\frac{5}{6}$ and $\frac{1}{4}$.

Fraction Strips



What is $\frac{5}{6} - \frac{1}{4}$?

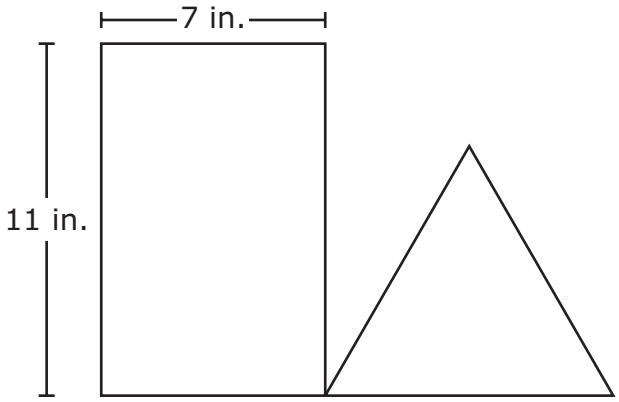
A $\frac{1}{5}$

B $\frac{7}{12}$

C $\frac{1}{2}$

D $\frac{5}{8}$

16 The combined perimeter of the rectangle and triangle is 63 inches. The model shows the dimensions of the rectangle.



What is the perimeter in inches of the triangle?

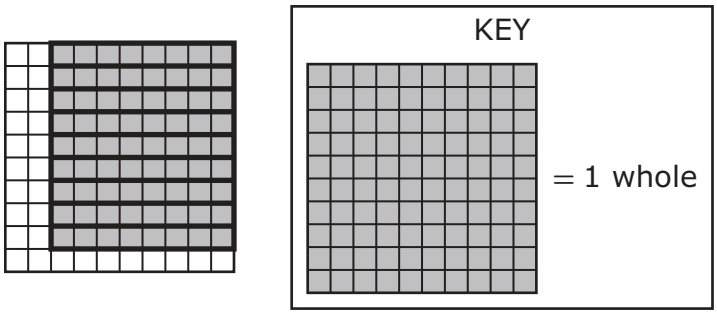
F 27 in.

G 45 in.

H 9 in.

J 21 in.

17 The hundredths model is shaded to represent a division problem.



Which equation is represented by the model?

A $0.72 \div 9 = 9$

B $0.72 \div 9 = 0.09$

C $0.72 \div 9 = 8$

D $0.72 \div 9 = 0.08$

---

18 Yvonne is using a coordinate grid for the first time. She wants to find the location of the ordered pair $(3, 7)$ on the grid.

Starting at the origin, which movement should Yvonne do first?

F Move right along the *x*-axis to 3

G Move up along the *y*-axis to 3

H Move right along the *y*-axis to 7

J Move up along the *x*-axis to 7

19 Mr. Wilfred used a full 2-liter bottle of liquid soap to fill two soap containers.

- He put 0.475 liter of soap in the first container.
- He put 0.35 liter of soap in the second container.

How many liters of liquid soap remained in the bottle?

A 0.825 L

B 0.625 L

C 1.175 L

D 1.49 L

---

20 The stem and leaf plot shows the numbers of sit-ups a group of students did in P.E.

Number of Sit-ups

Stem	Leaf
0	9
1	3 7 9
2	0 3 6
3	1 2 5 5 7
4	4 6 7 7
5	0 3
6	2 2
7	6
8	
9	0 2

6|2 means 62.

What is the difference between the number of students who did more than 36 sit-ups and the number of students who did fewer than 25 sit-ups?

F 11

G 6

H 18

J 1

21 Mr. Nolan paid $36.95 for each adult shirt and $23.95 for each youth shirt he bought. Mr. Nolan bought 2 adult shirts and 5 youth shirts.

How much money did he spend on these shirts?

A $167.35

B $258.65

C $232.65

D $193.65

---

22 The length of one edge of a cube is 3 units. What is the volume of this cube in cubic units?

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

23 Kristin drinks 0.5 liter of orange juice with breakfast each day for 15 days. How many milliliters of orange juice does Kristin drink during the 15 days?

A 15,000 mL

B 7,500 mL

C 750 mL

D 500 mL

---

24 The model is shaded to represent the remaining one-half of a cake. Three friends will each receive an equal amount of the remaining cake until it is all gone.

Cake

Which equation can be used to determine the fraction of the whole cake each friend will receive?

F $\frac{1}{2} \times 3 = \frac{3}{2}$

G $\frac{1}{2} \times 6 = \frac{6}{2}$

H $\frac{1}{2} \div 3 = \frac{1}{6}$

J $\frac{1}{2} \div 6 = \frac{1}{12}$

25 Which inequality is NOT true?

A $65.7 < 67.54$

B $4.003 > 4.03$

C $26.4 < 26.48$

D $0.91 > 0.097$

---

26 The table shows *x*-values and *y*-values for a number pattern.

x	*y*
12	18
24	30
48	54
60	66

Which statement is true?

F The pattern is multiplicative, because the *y*-values are 1.5 times the corresponding *x*-values.

G The pattern is multiplicative, because the *y*-values are 6 more than the corresponding *x*-values.

H The pattern is additive, because the *y*-values are 1.5 times the corresponding *x*-values.

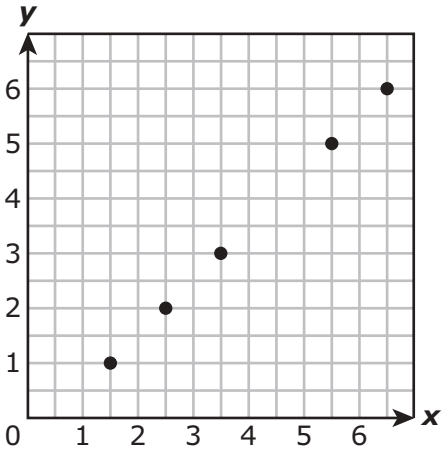
J The pattern is additive, because the *y*-values are 6 more than the corresponding *x*-values.

27 A table of ordered pairs is shown.

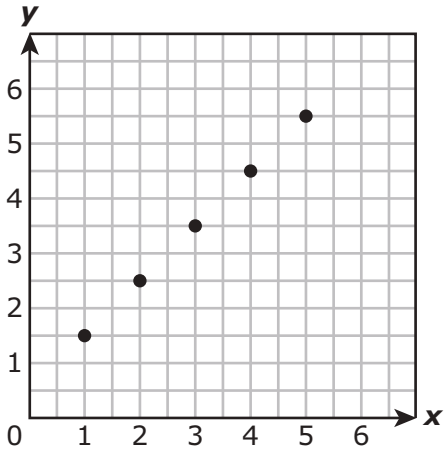
x	1	2	3	5	6
y	$1\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$

Which graph best represents these ordered pairs?

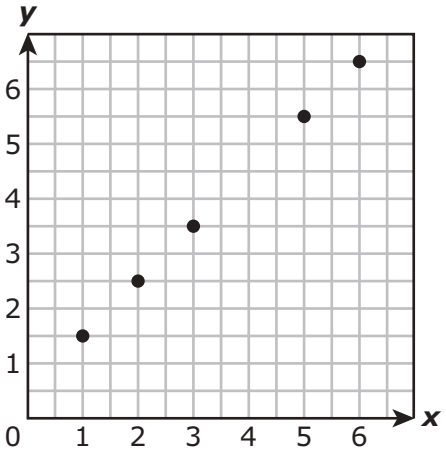
A



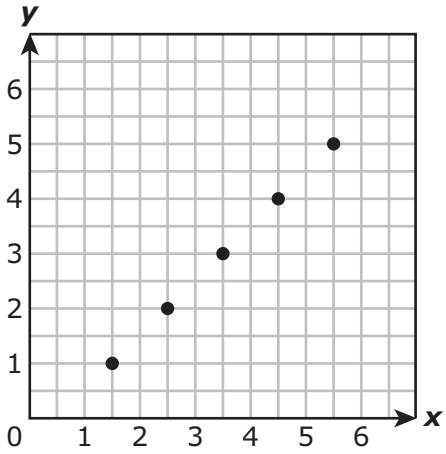
C



B



D



28 Harold cut $18\frac{1}{2}$ inches off a rope that was 60 inches long. How is the length of the remaining rope in inches written in decimal form?

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

29 Nakita bought items at a grocery store.

- She bought 2 boxes of crackers for $3.50 each.
- She used a coupon for $0.80 off the price of each box of crackers.
- She bought a jar of peanut butter for $4.85.
- She bought a package of juice boxes for $2.40.
- She used a coupon for $3.00 off the total price of the items she bought.

This expression can be used to determine the price of the items Nakita bought.

$$[2(3.50 - 0.80) + 4.85 + 2.40] - 3.00$$

What is the price of the items Nakita bought?

A $6.95

B $10.45

C $9.65

D $12.65

---

30 Which table of values does NOT represent $y = x + 4.5$?

F

x	y
1	5.5
2	6.5
3	7.5
5	9.5

H

x	y
2	6.5
4	8.5
5	9.5
6	10.5

G

x	y
4	18.0
5	22.5
6	27.0
9	40.5

J

x	y
1	5.5
3	7.5
7	11.5
9	13.5

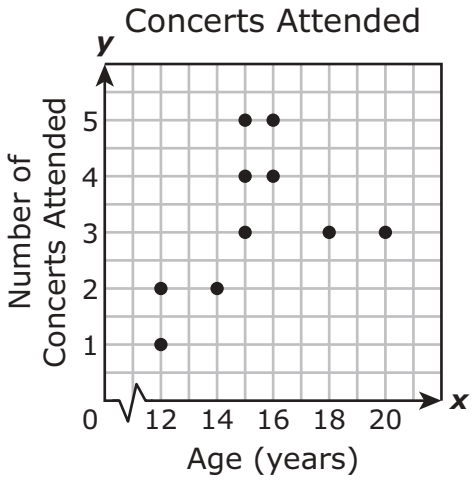
31 The table shows the ages of 10 people and the numbers of concerts they attended in the last year.

Concerts Attended

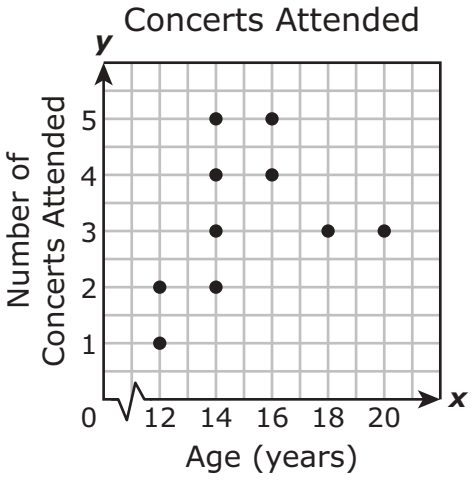
Age of Person (years)	15	12	20	16	14	18	15	16	12	15
Number of Concerts Attended	5	2	3	5	2	3	3	4	1	4

Which scatterplot best represents all the data in the table?

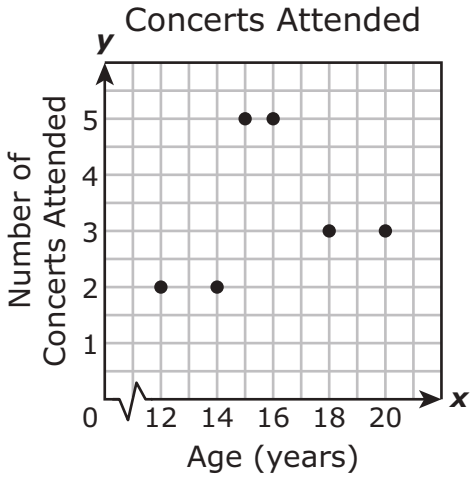
A



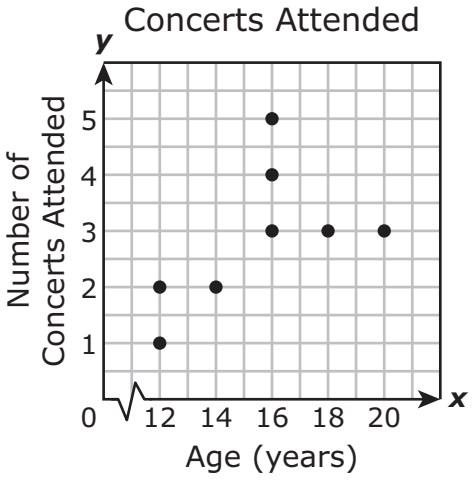
C



B



D



32 Mr. Adams drove his delivery truck 151.2 miles during 24 days. He drove the same number of miles each day.

How many miles did Mr. Adams drive each day?

F 6.3 mi

G 7.16 mi

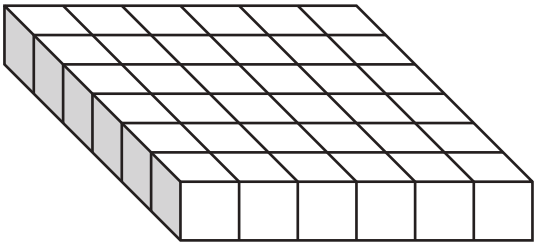
H 6.0 mi

J 5.13 mi

---

33 Hollis put a layer of boxes in the bottom of a container. Each box has a volume of 1 cubic foot. The base layer of boxes in the container is shown.

Base Layer



Hollis will need 8 of these layers to completely fill the container. What is the volume of the container in cubic feet?

A 36 cubic feet

B 288 cubic feet

C 384 cubic feet

D 1,296 cubic feet

34 Tommy bought 3 cups of blueberries. He will eat $\frac{1}{2}$ cup of blueberries each day.

How many days can Tommy eat the blueberries before they are all gone?

F 6

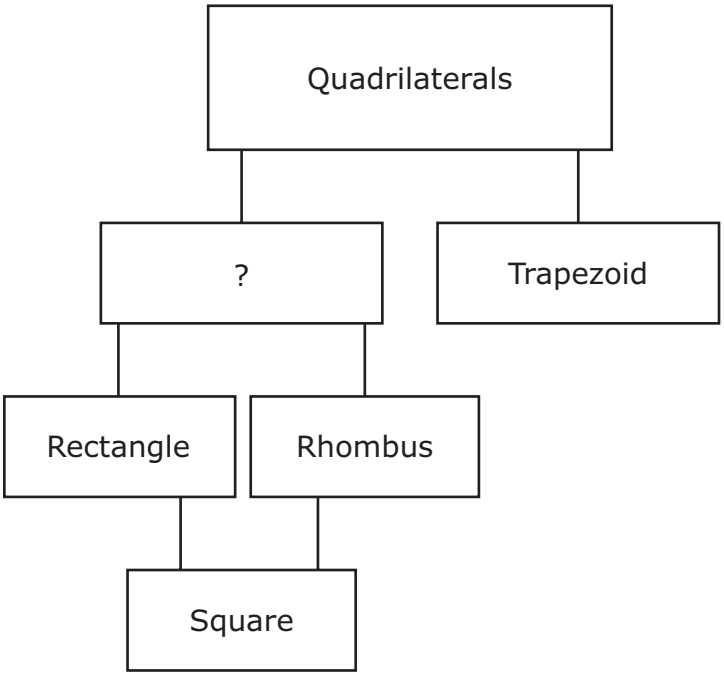
G 2

H 5

J 4

GO ON

35 Akshar is making a mobile that lists quadrilaterals.



What is the name of the subset of quadrilaterals missing from Akshar's mobile?

A Hexagon

B Polygon

C Parallelogram

D Triangle

36 Mr. Lorenzo gave his 2 sons $50 to buy a cooler. The total cost for the cooler is $44. Mr. Lorenzo told his sons that they could each have an equal share of the change they receive. The equation shown can be used to determine *s*, the amount of money each son should receive in dollars.

$$s = (50 - 44) \div 2$$

What amount of money is represented by *s*?

F $28

G $6

H $19

J $3

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

STOP

Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Correct Answer
1	2	Readiness	5.4(C)	A
2	1	Readiness	5.4(F)	H
3	3	Readiness	5.8(C)	A
4	4	Readiness	5.9(C)	J
5	2	Supporting	5.3(I)	D
6	1	Supporting	5.2(C)	0.6
7	2	Readiness	5.3(G)	A
8	1	Supporting	5.4(E)	J
9	2	Readiness	5.3(L)	C
10	4	Supporting	5.10(B)	H
11	2	Readiness	5.4(B)	B
12	3	Readiness	5.5(A)	J
13	2	Readiness	5.3(E)	B
14	1	Readiness	5.2(B)	H
15	2	Supporting	5.3(H)	B
16	3	Readiness	5.4(H)	F
17	2	Supporting	5.3(F)	D
18	3	Supporting	5.8(B)	F
19	2	Readiness	5.3(K)	C
20	4	Readiness	5.9(C)	G
21	2	Readiness	5.3(E)	D
22	3	Readiness	5.4(H)	27
23	3	Supporting	5.7(A)	B
24	2	Supporting	5.3(J)	H
25	1	Readiness	5.2(B)	B
26	2	Supporting	5.4(D)	J
27	3	Readiness	5.8(C)	B
28	2	Readiness	5.3(K)	41.5
29	1	Readiness	5.4(F)	C
30	2	Readiness	5.4(C)	G
31	4	Supporting	5.9(B)	A
32	2	Readiness	5.3(G)	F
33	3	Supporting	5.6(B)	B
34	2	Readiness	5.3(L)	F
35	3	Readiness	5.5(A)	C
36	2	Readiness	5.4(B)	J