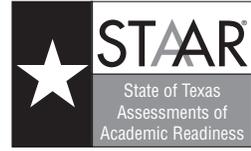


**GRADE 5
Mathematics**

Administered April 2018

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

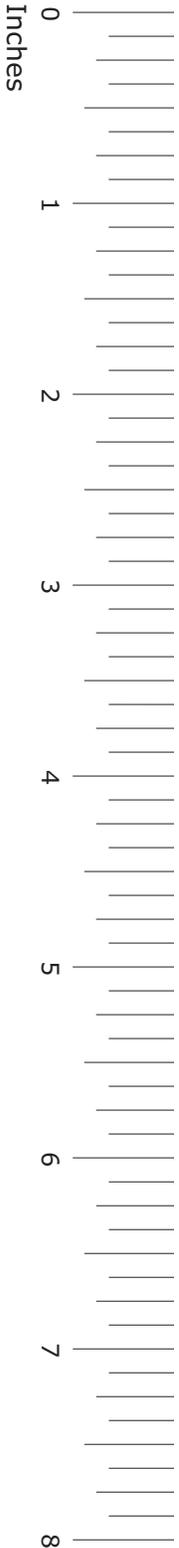
$$V = s \times s \times s$$

Rectangular prism

$$V = l \times w \times h$$

or

$$V = Bh$$



STAAR GRADE 5 MATHEMATICS REFERENCE MATERIALS

LENGTH

Customary

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)

20

19

18

17

16

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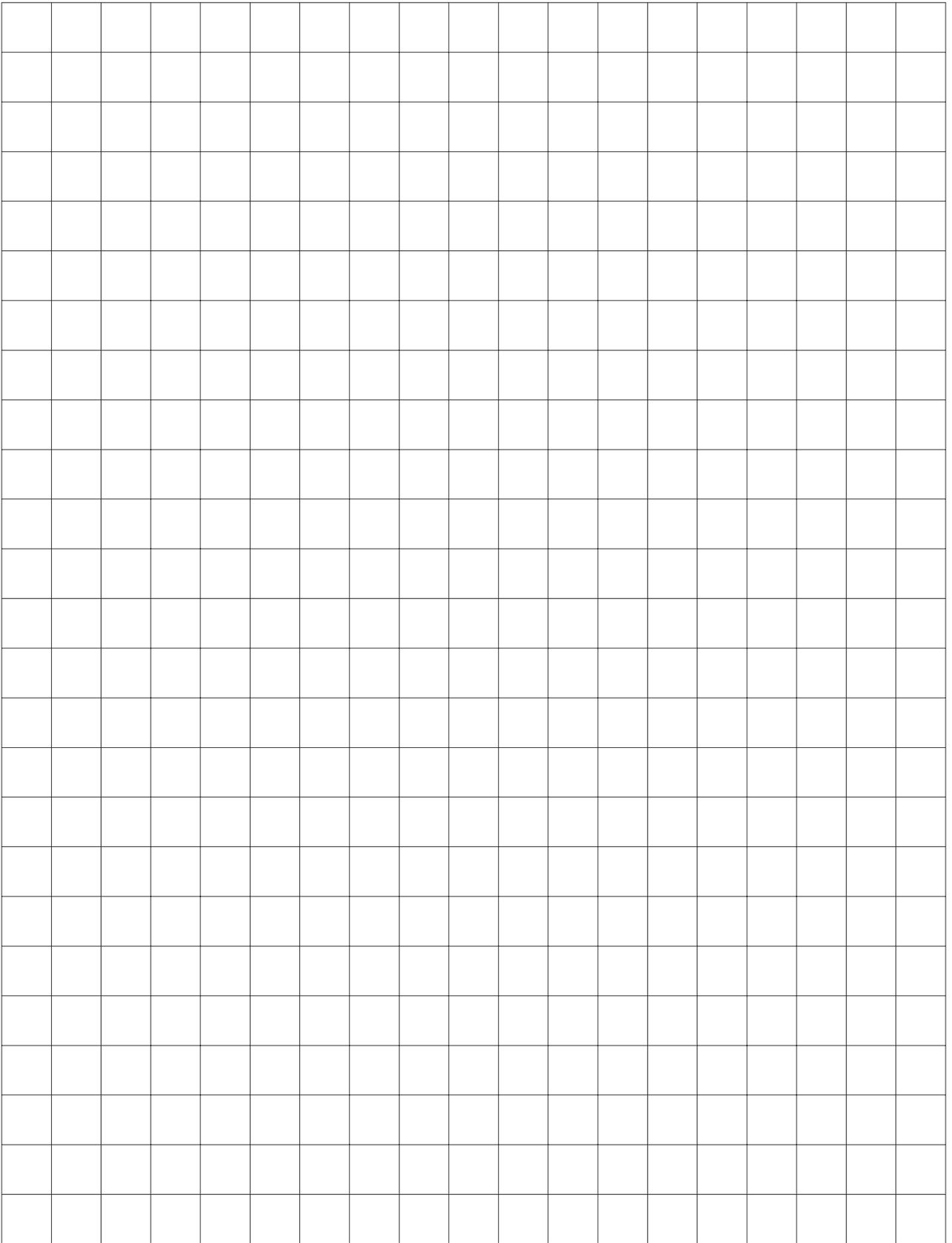
3

2

1

0

Centimeters



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 While cleaning his room, Paul found 7 cents on his desk, 98 cents under his bed, and 2 dollars and 4 cents in his closet. What was the total amount of money Paul found?

A \$2.09

B \$3.09

C \$3.72

D \$4.08

2 Which comparison is NOT true?

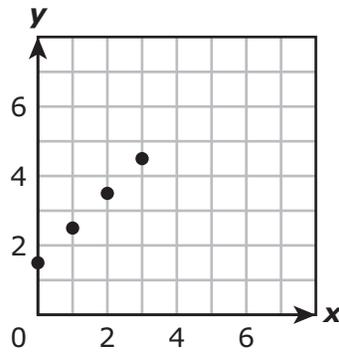
F $3.375 > 3.275$

G $6.875 < 6.9$

H $2.65 > 2.675$

J $7.675 < 7.75$

- 3 The graph shown represents the rule $y = x + 1.5$.



Which table contains only values that represent the rule?

A

x	0	1	2	3	9
y	0	1.5	3	4.5	6

C

x	0	1	2	3	9
y	1.5	3	4.5	6	7.5

B

x	0	1	2	3	9
y	0	1.5	3	4.5	13.5

D

x	0	1	2	3	9
y	1.5	2.5	3.5	4.5	10.5

-
- 4 Priscilla built a cabinet shaped like a rectangular prism. The length of the base is 9 inches, and the width is 40 inches.

What is the area of the base of the cabinet in square inches?

- F 49 square inches
- G 360 square inches
- H 98 square inches
- J Not here

5 A math problem is shown.

$$78 \overline{)4.68}$$

What is the quotient?

- A 0.14
- B 0.6
- C 0.06
- D 0.51

6 Wanda's net income for the month of April was \$2,438. The table shows her April budget except for an amount in the "Other" category.

April Budget

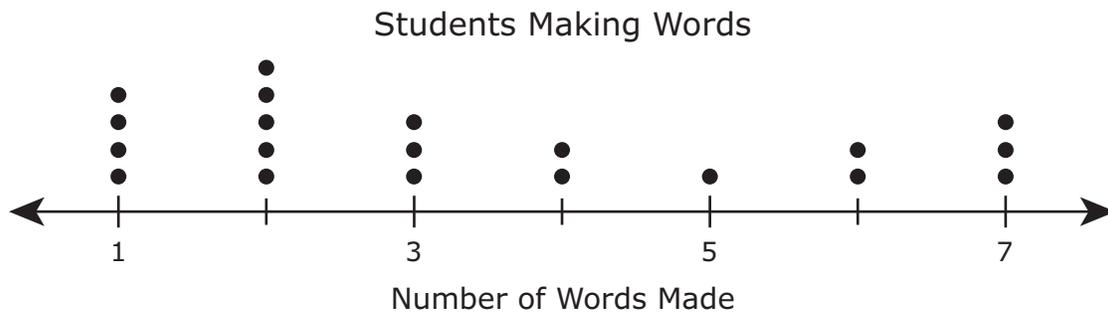
Category	Amount (dollars)
Rent	1,000
Utilities	285
Food	325
Transportation	275
Other	
Savings	450

What amount, in dollars and cents, should be in the "Other" category in order for Wanda's April budget to be balanced?

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

- 7 One bucket of gravel has a mass of 7.05 kg. What is the mass of 20 buckets of gravel in kilograms?
- A 14.1 kg
 - B 150 kg
 - C 27.05 kg
 - D 141 kg
-

- 8 The students in a class were each given a set of letters and asked to make words. The dot plot shows the numbers of students who made from 1 to 7 words.



What fraction of the students in the class made 5 or more words?

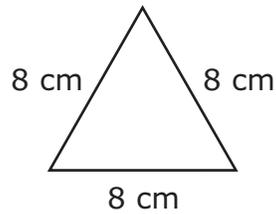
- F $\frac{1}{20}$
- G $\frac{1}{4}$
- H $\frac{3}{10}$
- J $\frac{3}{4}$

- 9 This graphic organizer is being used to classify triangles based on their angle measures or side lengths.

Triangles

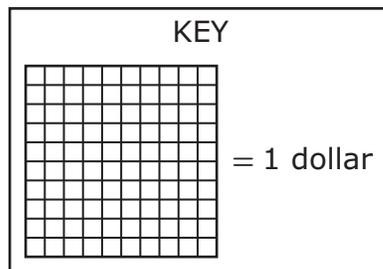
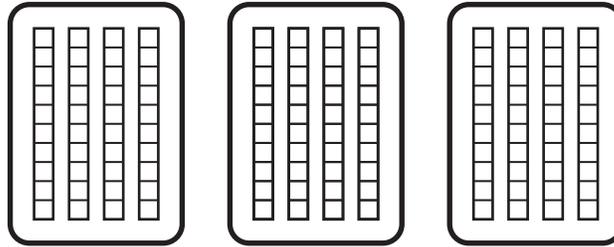
Angle Measure Classification			Side Length Classification		
Acute	Right	Obtuse	Isosceles	Equilateral	Scalene

Which list shows all of the ways this triangle could be classified?



- A Acute only
- B Equilateral only
- C Acute and isosceles only
- D Acute, isosceles, and equilateral only

- 10 George bought 3 peppers for a cost of \$0.40 each. The model represents this situation.



Which equation shows how to find the total cost in dollars and cents of the peppers George bought?

- F $3 \times 4 = 12.00$
- G $3 \times 40 = 120.00$
- H $3 \times 0.40 = 1.20$
- J $3 \times 0.40 = 0.12$
-
- 11 A student will graph the point (5, 3) on a coordinate grid. Which steps can the student take in order to graph the point correctly?
- A Start at the origin. Move 5 units up. Move 3 units right. Graph the point.
- B Start at the origin. Move 5 units right. Move 3 units right. Graph the point.
- C Start at the origin. Move 5 units up. Move 3 units up. Graph the point.
- D Start at the origin. Move 5 units right. Move 3 units up. Graph the point.

12 What is the value of the expression shown?

$$4[4.5 - 2(1.2)]$$

- F 8.4
 - G 15.6
 - H 12
 - J 19.2
-

13 Paula wants to buy 3 shirts and 2 belts. The shirts cost \$16.89 each, and the belts cost \$8.97 each. Paula has \$45.

Which of these amounts is the best estimate of how much more money Paula needs in order to buy the shirts and belts?

- A \$16
 - B \$10
 - C \$24
 - D \$5
-

14 Ella finished a bike race in 37.6 minutes. Miranda finished the race $9\frac{1}{10}$ minutes sooner than Ella finished it. How many minutes did it take Miranda to finish the race?

- F 32.5 minutes
- G 46.7 minutes
- H 28.59 minutes
- J Not here

15 Four students each wrote down a number between 30 and 40. The list shows the numbers they wrote.

- Elly—35
- Ulysses—39
- Maggie—37
- Palmer—33

Which student wrote down a prime number?

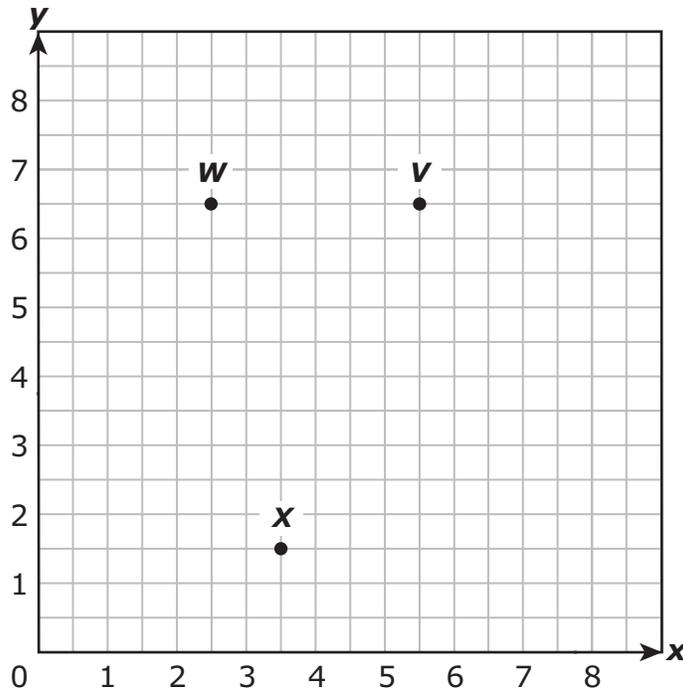
- A Elly
 - B Ulysses
 - C Maggie
 - D Palmer
-

16 What is the value of this expression?

$$\frac{1}{12} \div 36$$

- F 3
- G $\frac{1}{432}$
- H $\frac{1}{3}$
- J 432

17 The graph shows three of the four vertices of parallelogram $VWXY$.



At which location on the coordinate grid could point Y be located?

- A (1.5, 6.5)
- B (6.5, 2)
- C (6.5, 1.5)
- D (2, 6.5)

18 A family spent \$93 at a carnival.

- They spent \$18 on tickets to the carnival and \$36 on food.
- They spent the rest of the money on games.

Which equation can be used to find g , the amount of money in dollars the family spent on games?

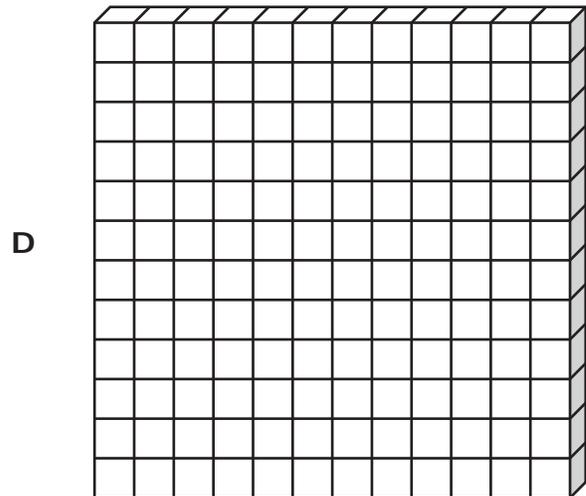
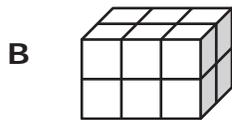
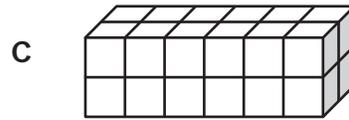
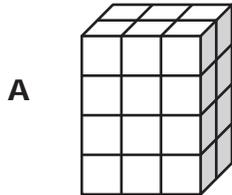
F $93 = g + 36 - 18$

G $93 = 18 + 36 - g$

H $93 = 36 - 18 - g$

J $93 = g + 36 + 18$

- 19 A student builds some rectangular prisms using cubes that each have a volume of 1 cubic inch. Which rectangular prism has a volume of 12 cubic inches?



-
- 20 Shauna is reading a 528 page book. She reads 22 pages every day. How many days will it take Shauna to read the entire book?

- F 506
- G 26
- H 24
- J 550

21 The equation $y = 1.5x$ can be used to determine y , the number of cups of water needed to cook x cups of rice. Which table shows the relationship between x and y ?

A Cooking Rice

Number of Cups of Rice, x	9	11	13	15
Number of Cups of Water, y	13.5	16.5	19.5	22.5

B Cooking Rice

Number of Cups of Rice, x	10	12	14	16
Number of Cups of Water, y	11.5	13.5	15.5	17.5

C Cooking Rice

Number of Cups of Rice, x	13	15	17	19
Number of Cups of Water, y	19.5	21	22.5	24

D Cooking Rice

Number of Cups of Rice, x	14	16	18	20
Number of Cups of Water, y	14.5	16.5	18.5	20.5

22 A temperature in degrees Fahrenheit is shown in expanded notation.

$$(9 \times 10) + (4 \times 0.1)$$

How is this temperature in degrees Fahrenheit written as a numeral?

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

- 23 Mark has \$5.25 in quarters. He spent all this money on 3 sports drinks. He spent the same amount for each sports drink.

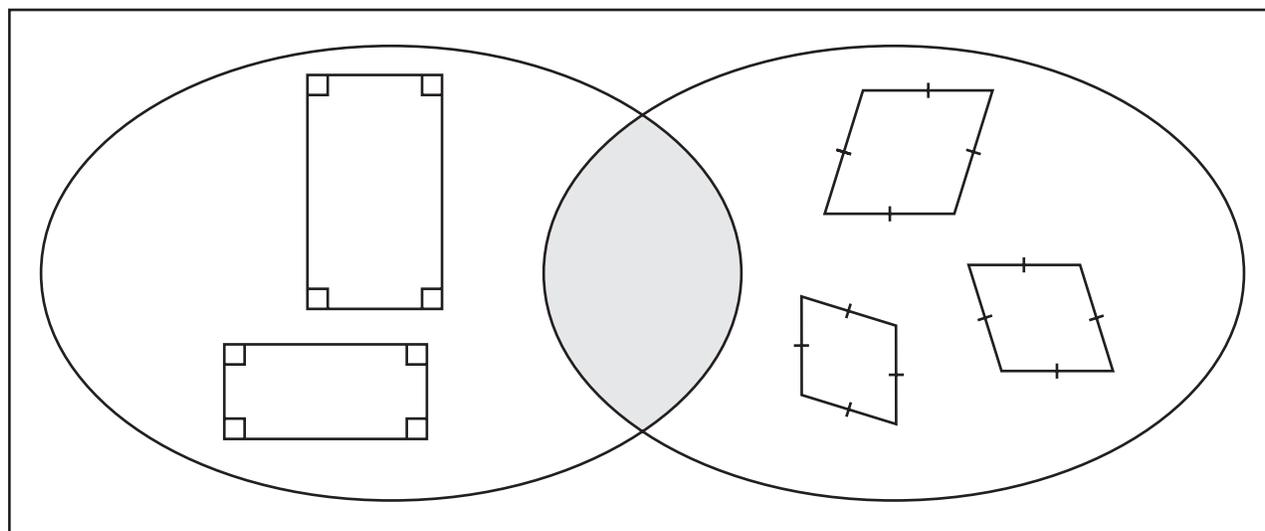


Which equation can be used to find the amount of money Mark spent for each sports drink?

- A $5.25 \times 3 = 15.75$
- B $5.25 \div 7 = 0.75$
- C $5.25 \div 3 = 1.75$
- D $5.25 \times 7 = 36.75$
-
- 24 The length of one wall in Mr. Shelby's classroom is 29 feet. What is the length of this wall in inches?
- F 348 in.
- G 242 in.
- H 338 in.
- J 248 in.

- 25 An electronic book has a file size of 2.4 megabytes. What is the file size in megabytes of 16 of these electronic books?
- A 32.4 megabytes
 - B 54.4 megabytes
 - C 32.64 megabytes
 - D 38.4 megabytes

26 This Venn diagram is being used to classify two types of quadrilaterals.



Which type of figure will always belong in the shaded section of this Venn diagram?

- F Rectangle
- G Rhombus
- H Square
- J Trapezoid

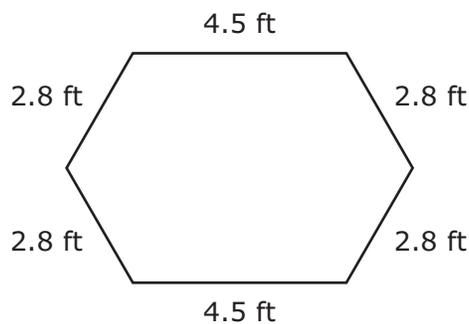
- 27 A chef used $\frac{1}{4}$ cup of milk for one recipe. Then she used 2 cups of milk for each of 5 more recipes. The total number of cups of milk the chef used can be found by using this expression.

$$\frac{1}{4} + (2 \times 5)$$

How many cups of milk did the chef use?

- A $10\frac{1}{4}$ c
- B $11\frac{1}{4}$ c
- C $\frac{11}{4}$ c
- D $\frac{15}{4}$ c
-

- 28 A hexagon and its side lengths are shown.



What is the perimeter of the hexagon in feet?

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

29 There are 16 pies on a picnic table.

- Each pie is cut into pieces.
- Each piece is $\frac{1}{8}$ of a pie.

How many pieces of pie are on the picnic table?

- A 2
B 88
C 24
D 128
-

30 Elias has three containers of cooking oil. The table shows the volume of cooking oil in each container.

Elias's Cooking Oil

Container	Volume (L)
X	0.946
Y	0.502
Z	1.42

Which list shows the containers in order from least to greatest volume in liters?

- F Container X, Container Y, Container Z
G Container Y, Container X, Container Z
H Container Z, Container Y, Container X
J Container Z, Container X, Container Y

- 31** Mr. Fernández packed 31 red apples and 41 green apples into a box for a customer. He packed 8 boxes like this. Mr. Fernández used this equation to find x , the number of apples he packed into all the boxes.

$$x = (31 + 41)8$$

How many apples did Mr. Fernández pack into the boxes?

- A** 576
 - B** 568
 - C** 80
 - D** 10,168
-
- 32** Which of these is NOT an example of a property tax?
- F** Tax paid on the value of a farm a person owns
 - G** Tax paid on the value of a piece of land a person owns
 - H** Tax paid on the value of a piece of furniture a person owns
 - J** Tax paid on the value of a home a person owns

33 The table represents a relationship between x and y .

x	y
5	22
10	27
15	32
20	37

The relationship between the x -values and y -values creates a pattern that is —

- A additive, because each x -value increases by 5
- B additive, because each y -value is determined by adding 17 to the corresponding x -value
- C multiplicative, because each y -value is determined by multiplying the corresponding x -value by 17
- D multiplicative, because each x -value is a multiple of 5

34 The stem and leaf plot shows Ryan's math scores so far this year.

Ryan's Math Scores

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

9|1 means 91.

What is the sum of Ryan's greatest math score and least math score?

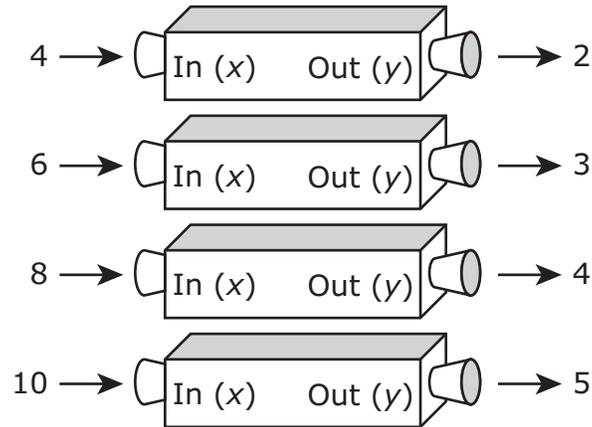
- F 169
 - G 187
 - H 176
 - J Not here
-

35 The weight of sand in a large bag is 63.4 pounds. The sand in the bag is divided equally into 20 small bags.

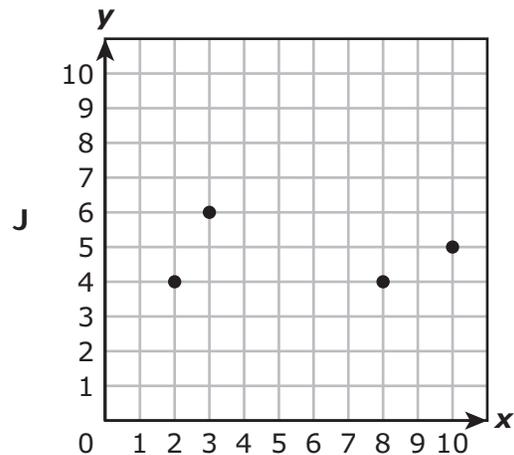
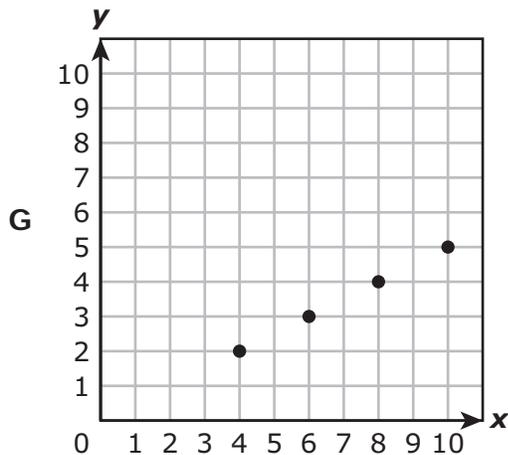
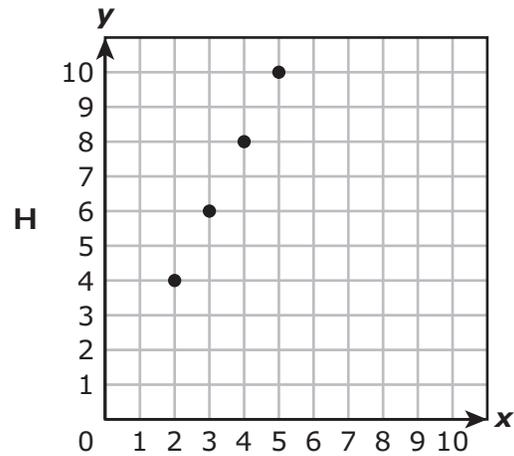
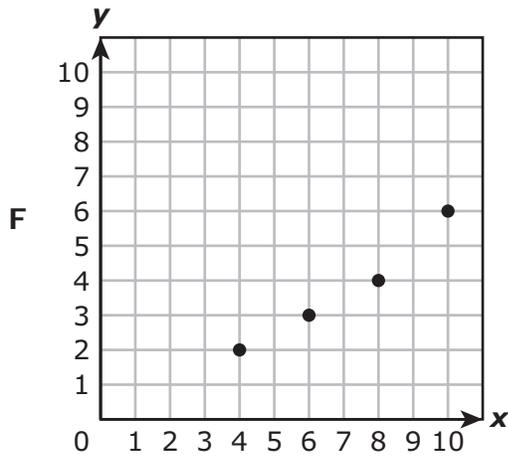
What is the weight in pounds of the sand in each small bag?

- A 3.114 lb
- B 3.107 lb
- C 31.7 lb
- D 3.17 lb

- 36 Henry used a number machine to create ordered pairs of numbers. Each number he put into the machine, x , came out as a different number, y , based on a rule. Some ordered pairs from Henry's machine are shown.



Which graph best represents the ordered pairs from Henry's number machine?



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