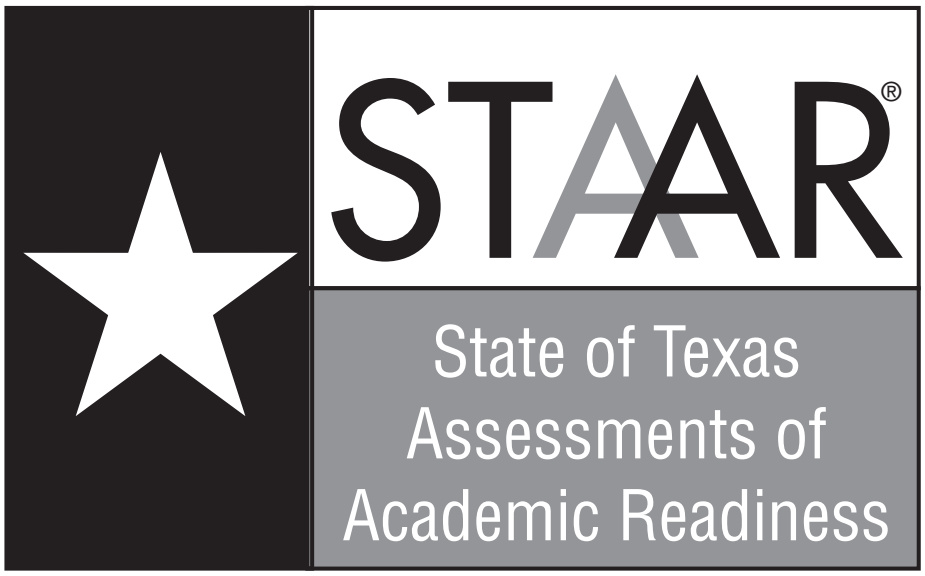

GRADE 4

Mathematics

Administered May 2022

RELEASED

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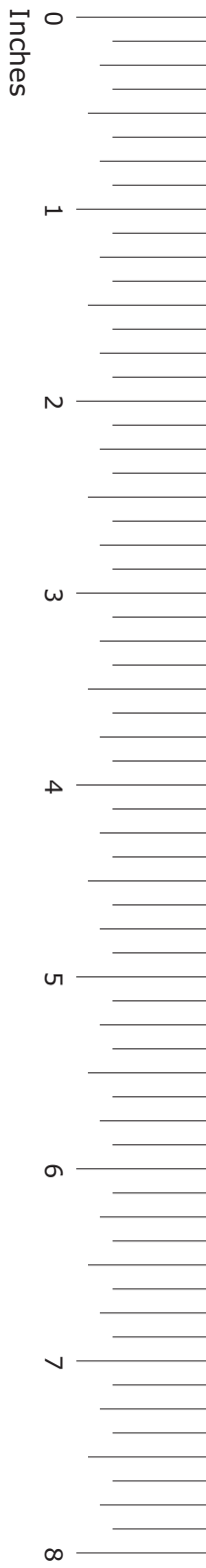
STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS

PERIMETER

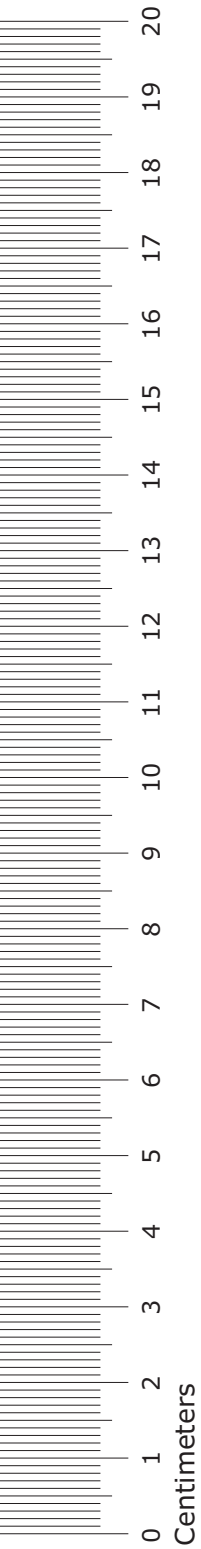
Square			$P = 4s$
Rectangle	$P = l + w + l + w$	or	$P = 2l + 2w$

AREA

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



STAAR GRADE 4 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)

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

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 Jon put a pie in the oven at 5:15 P.M. He took the pie out of the oven 35 minutes later.

At what time did Jon take the pie out of the oven?

A 5:45 P.M.

B 6:50 P.M.

C 5:50 P.M.

D 6:45 P.M.

---

2 A town had three and fourteen-hundredths inches of rain during June. What is the value of the digit in the tenths place?

F 3

G 0.04

H 0

J 0.1

3 An art teacher ordered 26 marker sets for his classes. There are 100 markers in each set.

How many markers are in 26 sets?

A 800

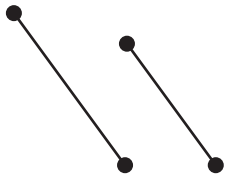
B 26,000

C 2,600

D 126

---

4 A drawing is shown.



What does the drawing show?

F Two line segments that appear to be parallel

G Two line segments that appear to be perpendicular

H Two lines that appear to be parallel

J Two lines that appear to intersect

5 A store sells bags of potato chips.

- $\frac{1}{3}$ of the bags are barbecue-flavored chips.
- $\frac{3}{5}$ of the bags are cheese-flavored chips.
- The rest of the bags are plain chips.

Which statement is true?

A More than $\frac{1}{2}$ of the bags are plain chips.

B There are no bags of plain chips.

C Exactly $\frac{1}{2}$ of the bags are plain chips.

D Less than $\frac{1}{2}$ of the bags are plain chips.

6 The list shows the numbers of books donated to a library on fourteen days.

0, 1, 4, 4, 6, 7, 8, 8, 9, 12, 12, 16, 16, 17

The librarian made this frequency table to show the data. The frequency table is not complete.

Books Donated to the Library Each Day

Number of Books	Number of Days
0 to 4	|||
5 to 9	$\not{\text{IIII}}$
10 to 14	||
15 to 19	|||

Which row of the frequency table is incomplete?

F The row showing 0 to 4 books

G The row showing 5 to 9 books

H The row showing 10 to 14 books

J The row showing 15 to 19 books

---

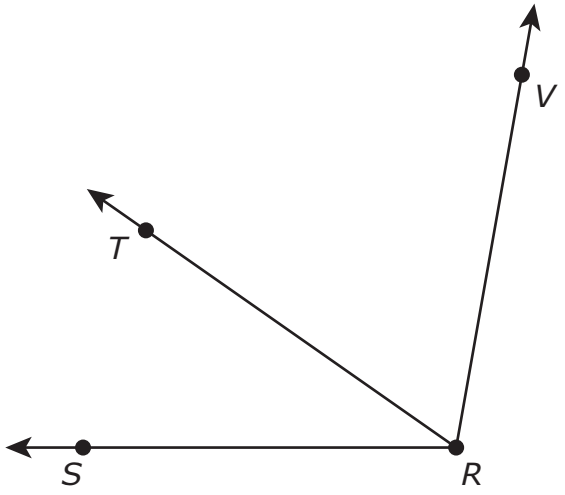
7 There are two hiking trails in a park.

- Trail Y is 2.7 miles long.
- Trail Z is 5.84 miles long.

What is the total length of these two hiking trails?

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

8 Angle *SRT* has a measure of 35°. Angle *TRV* has a measure of 65°.



What is the measure in degrees of angle *SRV*?

F 30°

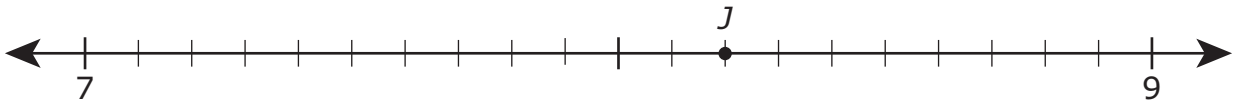
G 110°

H 90°

J 100°

---

9 Point *J* is shown on the number line.



Which number does point *J* represent?

A 8.02

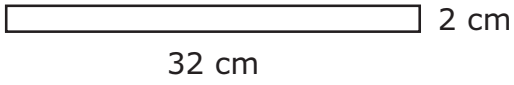
B 8.2

C 7.12

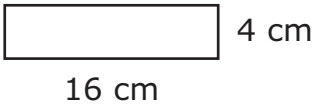
D 7.13

10 A rectangle has a perimeter of 40 centimeters and an area of 64 square centimeters. Which model could represent this rectangle?

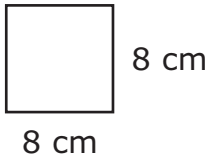
F



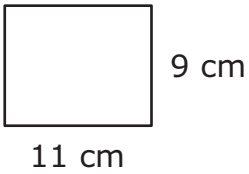
H



G



J



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11 The fourth-grade classes at a school made flowers to decorate the cafeteria. There are 5 fourth-grade classes at this school.

- To make each flower, 4 sheets of paper were used.
- The classes used a total of 300 sheets of paper.
- Each class made the same number of flowers.

How many flowers did each fourth-grade class make?

A 75

B 15

C 240

D 17

12 Trina lives in an apartment. The table shows some of the expenses that Trina paid for three months to live in the apartment.

Monthly Expenses

Expenses	January	February	March
Rent	$1,500.00	$1,500.00	$1,500.00
Water	$32.67	$28.24	$38.15
Electricity	$118.92	$98.72	$84.53
Cable TV	$78.75	$78.75	$78.75

Which expenses were variable expenses for Trina during these three months?

F Water and Electricity only

G Rent, Water, and Electricity

H Rent and Cable TV only

J Cable TV only

13 Four people are mowing their lawns. The table shows the fraction of each lawn that has already been mowed by each person.

Lawns Mowed

Person	Amount of Lawn Already Mowed
Nate	$\frac{10}{15}$
Rudy	$\frac{5}{6}$
Marc	$\frac{12}{18}$
Santos	$\frac{6}{8}$

Which of these people have mowed greater than $\frac{3}{4}$ of a lawn?

A Nate, Rudy, Marc, and Santos

B Nate and Marc only

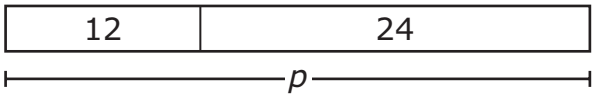
C Rudy only

D Santos only

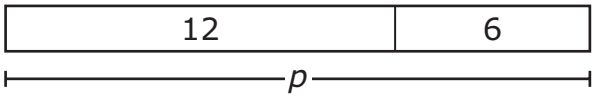
14 Erin has 12 pictures from a field trip and some pictures from a vacation. She has twice as many pictures from the vacation as from the field trip.

Which strip diagram represents p, the total number of pictures Erin has?

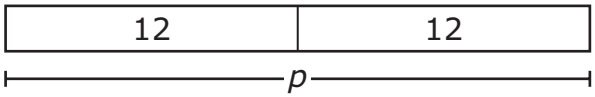
F



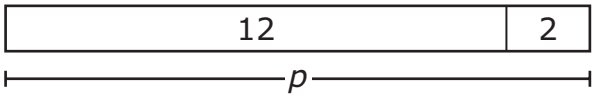
G



H



J



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15 What decimal number is equivalent to $\frac{18}{10}$?

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

16 The table shows the number of miles a family will travel next summer.

Summer Travel

Start	Finish	Distance (miles)
Home	Dinosaur Valley State Park	81
Dinosaur Valley State Park	Longhorn Cavern State Park	129
Longhorn Cavern State Park	Stephen F. Austin State Park	181
Stephen F. Austin State Park	Galveston Island State Park	110
Galveston Island State Park	Lake Whitney State Park	288
Lake Whitney State Park	Home	78

Which is the best estimate of the combined number of miles this family will travel next summer?

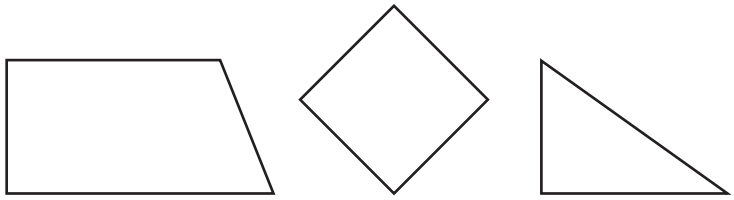
F 700 mi

G 900 mi

H 1,100 mi

J 2,300 mi

17 Deon sorted figures into groups. The figures shown were sorted into the same group.



Which statement best describes the figures in this group?

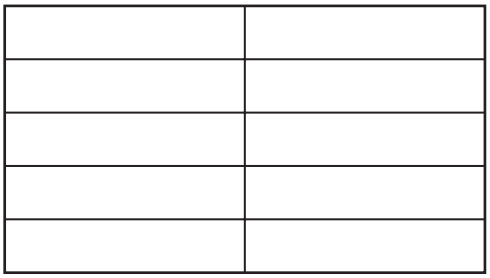
A Each figure has only one obtuse angle.

B Each figure has at least one acute angle.

C Each figure has only one pair of parallel sides.

D Each figure has at least one pair of perpendicular sides.

18 The blank model shown can be shaded to represent $\frac{7}{10}$.



Which expression does **NOT** show a way to represent $\frac{7}{10}$ as a sum of fractions?

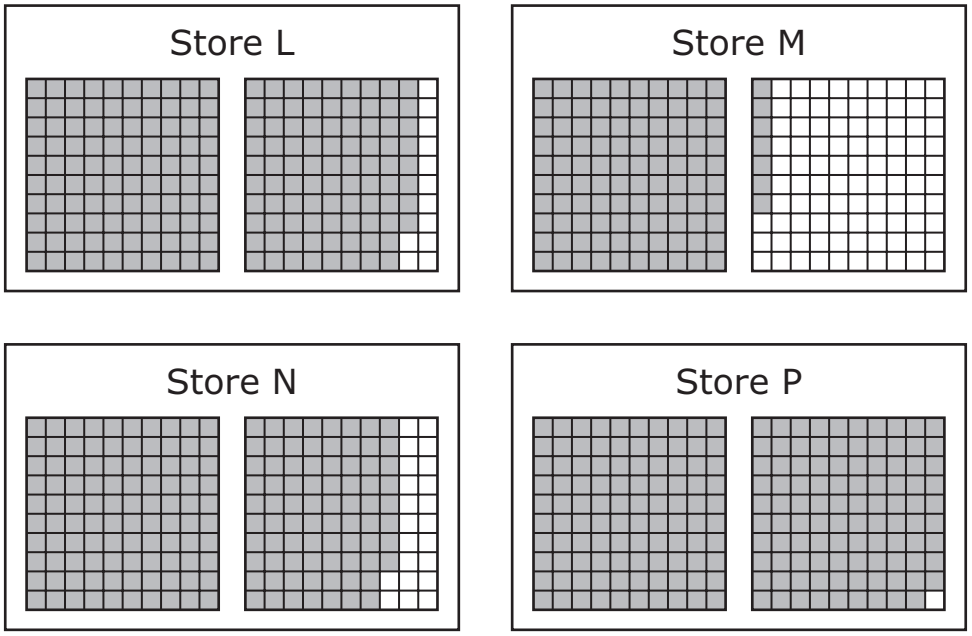
F $\frac{2}{10}+\frac{2}{10}+\frac{2}{10}+\frac{1}{10}$

G $\frac{4}{10}+\frac{3}{10}+\frac{3}{10}$

H $\frac{6}{10}+\frac{1}{10}$

J $\frac{1}{10}+\frac{1}{10}+\frac{1}{10}+\frac{1}{10}+\frac{1}{10}+\frac{1}{10}+\frac{1}{10}$

19 The models represent the price for a pound of grapes at four different stores. Each model is shaded to represent a price that is greater than $1.00.



Which stores have a price greater than $1.60 but less than $1.90 for a pound of grapes?

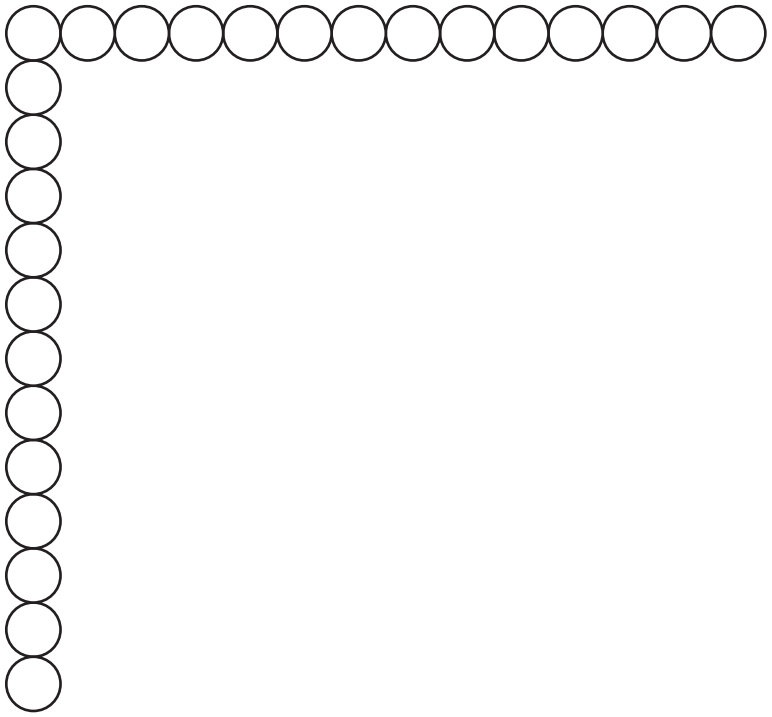
A Store L, Store N, and Store P only

B Store L, Store M, and Store N only

C Store L and Store N only

D None of the stores

20 Lori started to draw an array to help her solve a math problem. She drew one full row and one full column of the array, as shown.



She finished drawing the array correctly. Which equation represents a problem Lori could solve using this array?

F $12 \times 13 = 156$

G $13 \times 13 = 169$

H $14 \times 12 = 168$

J $13 \times 14 = 182$

21 The table shows numbers of feet and the equivalent numbers of inches.

Feet-to-Inches Conversions

Number of Feet	Number of Inches
3	36
5	60
8	96
10	120

Lionel painted a wall that is 12 feet long. How many inches long is the wall that Lionel painted?

A 144 in.

B 122 in.

C 156 in.

D 132 in.

22 Ms. Panvini gave her students a test with twenty math problems. The table shows the fraction of correct answers for each of the five students who finished the test first.

Math Test

Student	Correct Answers
1	$\frac{17}{20}$
2	$\frac{1}{2}$
3	$\frac{9}{10}$
4	$\frac{4}{5}$
5	$\frac{3}{4}$

Which comparison is true?

F $\frac{9}{10} < \frac{4}{5}$

G $\frac{17}{20} < \frac{9}{10}$

H $\frac{9}{10} < \frac{3}{4}$

J $\frac{17}{20} < \frac{1}{2}$

23 There were 3 quarts of water in a container in a science classroom. A student poured 1 quart 3 cups of the water into a sink.

What amount of the water in quarts and cups was left in the container after the student poured some of the water into the sink?

A 4 qt 3 c

B 2 qt 3 c

C 2 qt 1 c

D 1 qt 1 c

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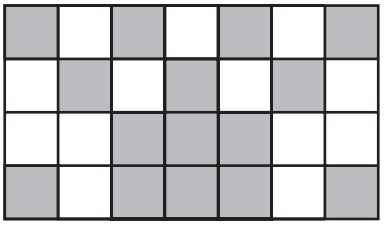
24 A gardener planted 28 bushes in 4 rows. All of the bushes were either rose bushes or lilac bushes. The shaded parts of the model represent the lilac bushes.



Which equation shows how to find the fraction of the bushes that are lilac bushes?

F $\frac{4}{28} + \frac{3}{28} + \frac{3}{28} + \frac{5}{28} = \frac{15}{28}$

G $\frac{3}{28} + \frac{4}{28} + \frac{4}{28} + \frac{2}{28} = \frac{13}{28}$

H $\frac{4}{7} + \frac{3}{7} + \frac{3}{7} + \frac{5}{7} = \frac{15}{28}$

J $\frac{15}{28} + \frac{13}{28} = \frac{28}{28}$

25 Yolanda wrote a number.

- The digit in the millions place is an 8.
- The digit in the thousands place is a 6.
- The digit in the hundredths place is a 2.

Which number could be the number Yolanda wrote?

A 85,346,000.12

B 38,056,000.21

C 58,346,000.12

D 98,674,200.21

---

26 The list shows the numbers of points a basketball team scored during the games the team played last season.

83, 98, 104, 88, 95, 98, 101, 89, 92, 89

The stem and leaf plot also shows these data.

Points Scored

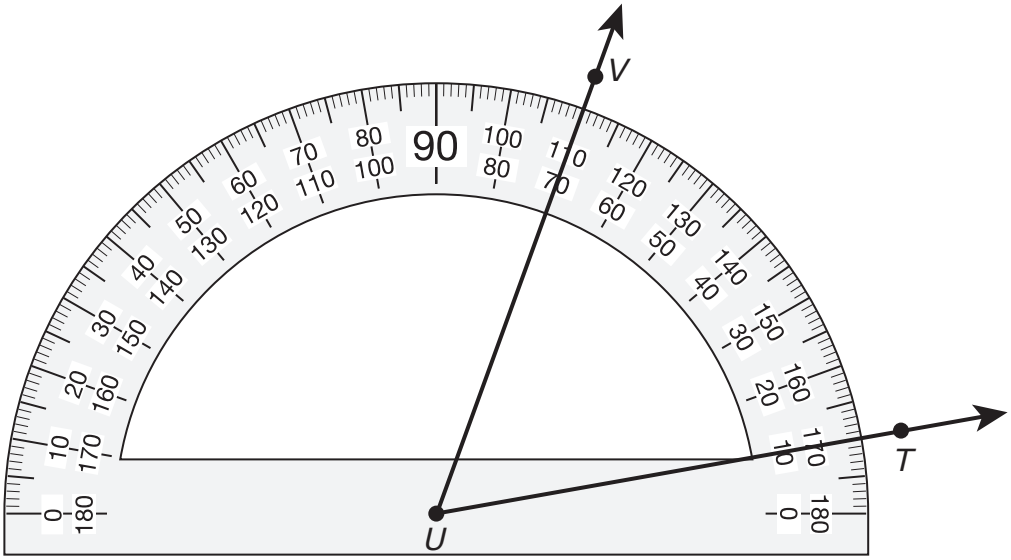
Stem	Leaf
8	3 8 9 9
9	☐ 5 8 8
10	1 4

9|8 means 98 points.

What number goes in the ☐ to complete the stem and leaf plot?

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

27 Angle *TUV* is shown on the protractor.



What is the measure of angle *TUV* to the nearest degree?

A 170°

B 60°

C 110°

D 10°

28 On Thursday 50 books were returned to a library. On Friday 4 times as many books were returned to the library as books that were returned on Thursday.

Which set of equations can be used to find b, the total number of books returned to the library on these two days?

F $50 + 50 = 100$
$100 \times 4 = b$

G $50 + 50 = 100$
$100 + 4 = b$

H $50 \times 4 = 200$
$200 \times 50 = b$

J $50 \times 4 = 200$
$200 + 50 = b$

---

29 Which of these statements describe the primary services of a bank?

I. Customers can borrow money from a bank.
II. Customers can put money into a savings or checking account.
III. Customers can pick up packages at a bank.
IV. Customers can cash checks at a bank.

A Statements II and IV only

B Statements I, II, and IV only

C Statement III only

D Statements I, II, and III only

30 A baker is making cakes. It takes 9 eggs to make each cake. The baker has 8 cartons of eggs, and each carton contains 12 eggs.

What is the greatest number of cakes the baker can make using these eggs?

F 10

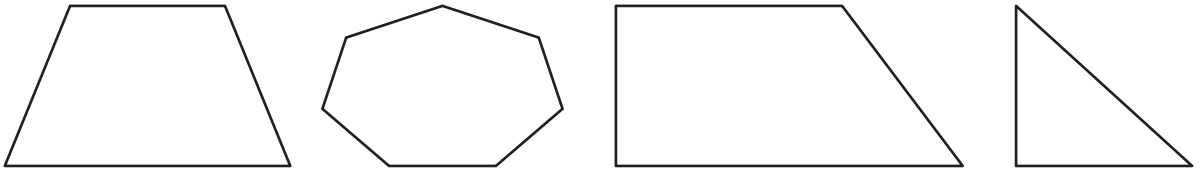
G 11

H 6

J 13

---

31 A set of figures is shown.



T W X Y

Which figure has at least one acute angle, right angle, and obtuse angle?

A Figure T

B Figure W

C Figure X

D Figure Y

32 Which mixed number is equivalent to 17.04?

F $17\frac{4}{10}$

G $17\frac{1}{4}$

H $17\frac{40}{10}$

J $17\frac{4}{100}$

---

33 A rectangular place mat is 18 inches long and 12 inches wide. What is the area of this place mat in square inches?

A 216 square inches

B 60 square inches

C 54 square inches

D 900 square inches

34 The table shows a relationship between the position of a number in a pattern and its value.

Position	Expression	Value
1		21
2		42
3		63
4		84

Which set of expressions shows how to find the value when given the position?

F

Expression
$21 - 20$
$42 - 20$
$63 - 20$
$84 - 20$

H

Expression
1×21
2×21
3×21
4×21

G

Expression
$1 + 20$
$2 + 20$
$3 + 20$
$4 + 20$

J

Expression
1×2
2×2
3×2
4×2

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

STOP

STAAR
GRADE 4
Mathematics
May 2022