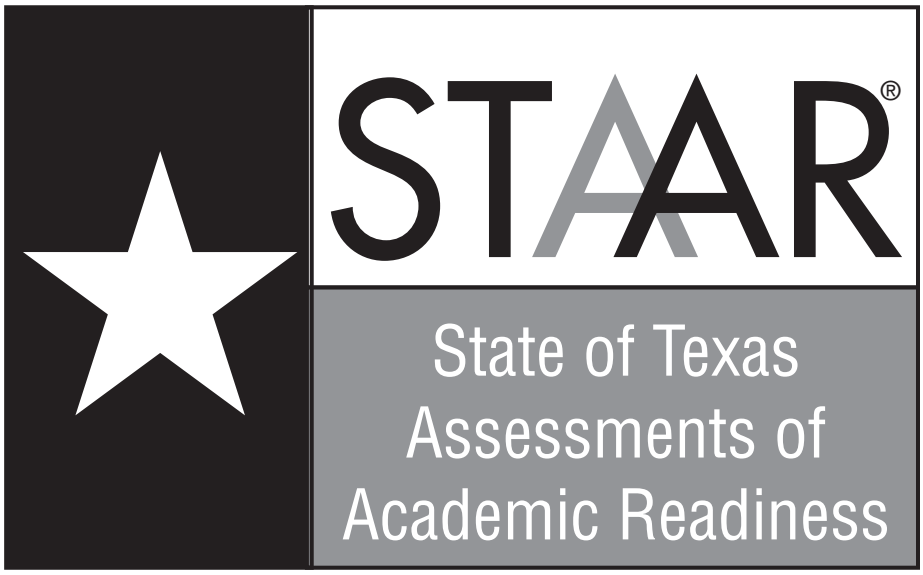


GRADE 4

Mathematics

Administered May 2017

RELEASED

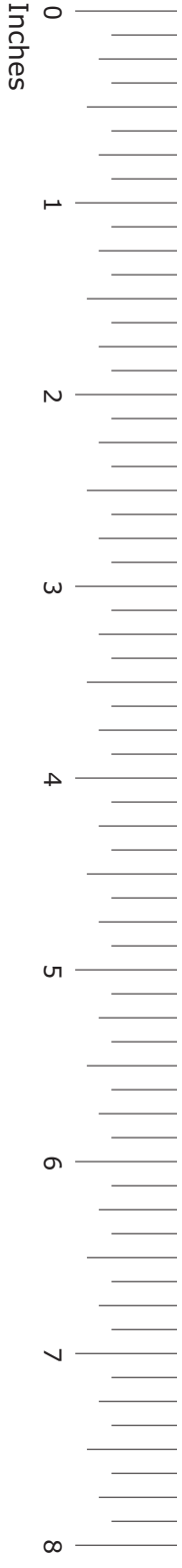
STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS

PERIMETER

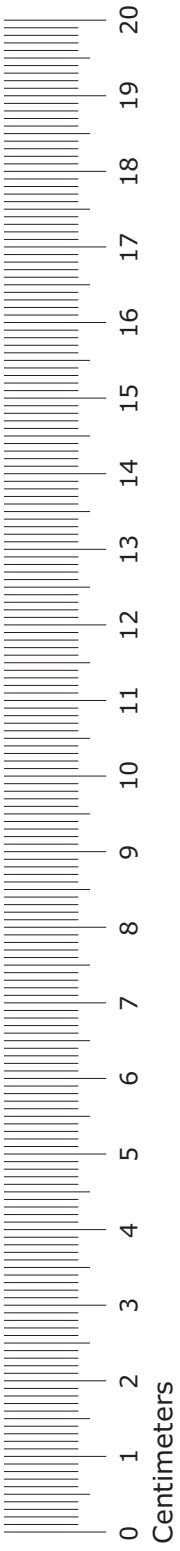
Square			$P = 4s$
Rectangle	$P = l + w + l + w$	or	$P = 2l + 2w$

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

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 Larry has written $\frac{6}{10}$ of his book report. Which decimal represents the part of the book report he has written?

A 6.1

B 6.01

C 0.6

D 0.06

2 The stem and leaf plot shows the scores given to the dogs at a dog show. Possible scores were between 0.1 and 5.0.

Dog Show Scores

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

1|5 means a score of 1.5.

What is the difference between the highest score and the lowest score shown in the stem and leaf plot?

F 4.3

G 3.7

H 0.25

J 0.47

---

3 Quinlyn described a number using these clues.

- The value of the digit 7 is (7×10).
- The value of the digit 3 is $(3 \times 1{,}000)$.
- The value of the digit 1 is (1×100).

Which number could fit Quinlyn's description?

A 3,175.02

B 93,075.01

C 3,651.70

D 9,372.01

4 There are 27 teams in a hockey league. There are 16 players on each team. How many players are in the hockey league?

F 162

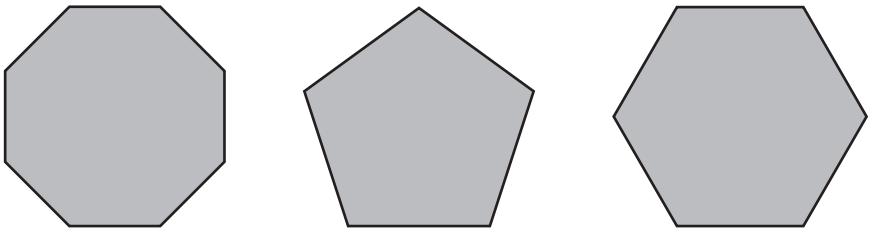
G 189

H 432

J Not here

---

5 Ruth sorted polygons into groups. The polygons shown belong in the same group.



Which description best represents this group?

A Polygons with perpendicular and parallel lines

B Polygons with perpendicular lines only

C Polygons with acute and obtuse angles

D Polygons with obtuse angles only

6 On Monday, Pete and Ted completed a total of $\frac{7}{10}$ of their group project. Pete completed $\frac{3}{10}$ of the project.

What fraction of the group project did Ted complete on Monday?

F $\frac{4}{10}$

G $\frac{4}{7}$

H $\frac{7}{10}$

J $\frac{3}{4}$

---

7 Scott traveled 557 miles to visit his cousin. What is this number rounded to the nearest ten?

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

8 Bonnie has a rectangular picture of her dog. Use the ruler provided to measure the length and width of the picture to the nearest inch.

Which measurement is closest to the area of the picture in square inches?

F 15 square inches

G 96 square inches

H 24 square inches

J 16 square inches

9 The rule +38 is used to show the relationship between the position of a number in a pattern and the value of that number. Which table shows this relationship?

A

Position	Expression	Value
38	$38 + 1$	39
38	$38 + 2$	40
38	$38 + 3$	41
38	$38 + 4$	42

B

Position	Expression	Value
38	38×1	38
38	$38 + 0$	38
38	$38 \div 1$	38
38	$38 - 0$	38

C

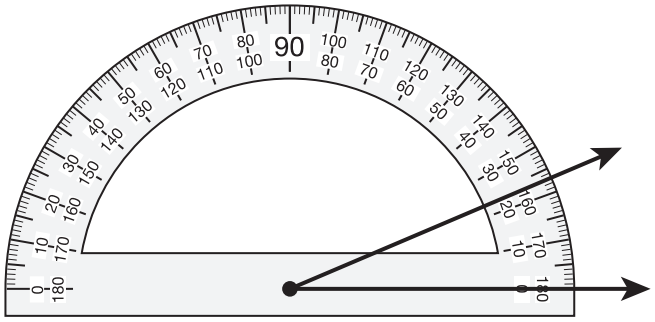
Position	Expression	Value
1	$1 + 37$	38
2	$2 + 36$	38
3	$3 + 35$	38
4	$4 + 34$	38

D

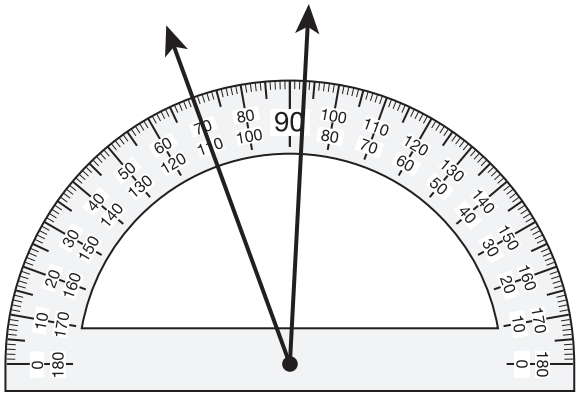
Position	Expression	Value
1	$1 + 38$	39
2	$2 + 38$	40
3	$3 + 38$	41
4	$4 + 38$	42

10 Which angle does NOT appear to have a measure of 23°?

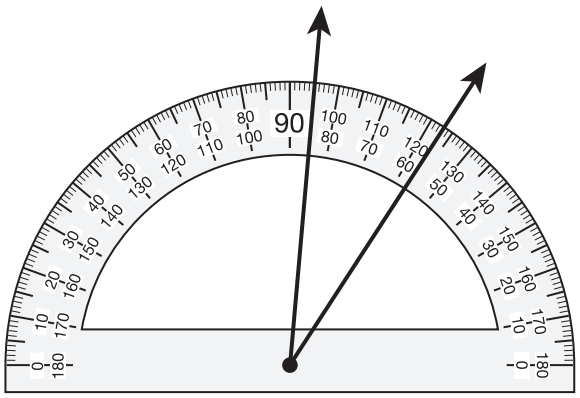
F



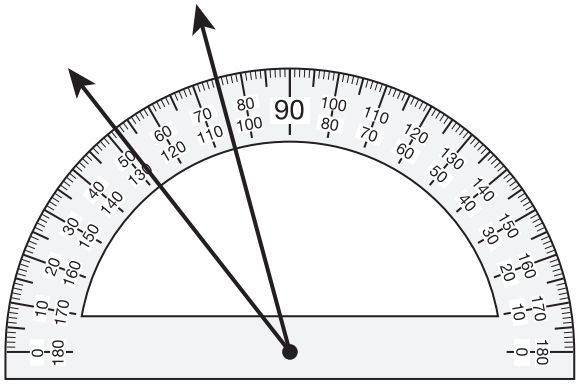
G



H



J



GO ON

11 It took Ian three years to collect 25,413 aluminum cans to recycle. In the first year he collected 8,917 cans, and in the second year he collected 7,639 cans.

Which equation can be used to find x, the number of cans Ian collected in the third year?

A $x = 25{,}413 - 8{,}917 - 7{,}639$

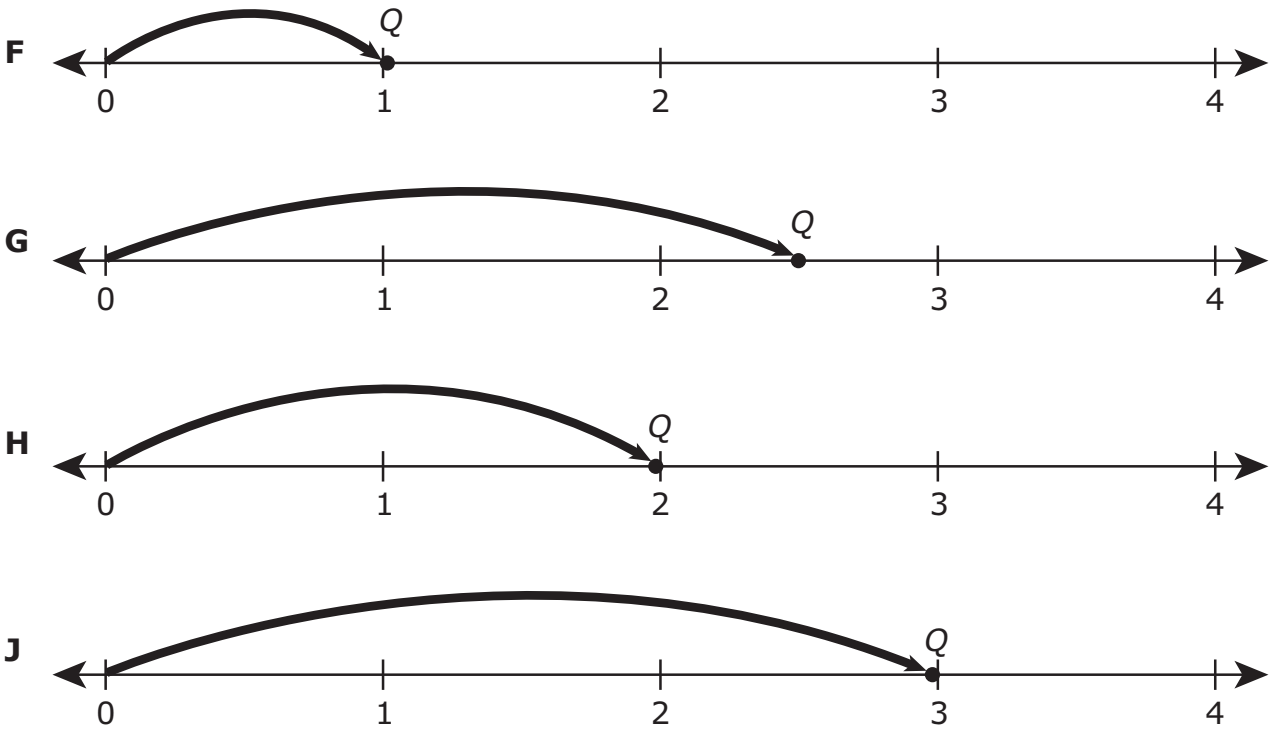
B $x = 25{,}413 + 8{,}917 + 7{,}639$

C $x = 8{,}917 + 7{,}639$

D $x = 8{,}917 - 7{,}639$

---

12 On which number line does point Q best represent a distance of 2.98 units from zero?



GO ON

13 Zoey sold snacks at a neighborhood pool. The cost of preparing the snacks was $10.29. The money she received from the sale of the snacks was $21.75.

What was Zoey's profit?

A $32.04

B $21.75

C $11.46

D $10.29

---

14 Trevor jogged the following fractions of a mile last week.

- Monday: $\frac{3}{4}$ mile
- Tuesday: $\frac{5}{10}$ mile
- Friday: $\frac{4}{5}$ mile

Which comparison of these fractions of a mile is true?

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

G $\frac{4}{5} < \frac{3}{4}$

H $\frac{3}{4} < \frac{5}{10}$

J $\frac{3}{4} < \frac{4}{5}$

15 Mr. Yates walks around the perimeter of a square playground every day for exercise. Each side of the playground is 29 yards long.

What is the perimeter of the playground in yards?

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

---

16 The coaches at Xavier Elementary School bought cases of sports drinks for a field day. They bought 76 cases of drinks. Each case contained 24 drinks. All the drinks were given out to students. Each student received 3 sports drinks.

How many students received sports drinks?

F 5,472

G 300

H 1,824

J 608

17 Lana drew these figures.

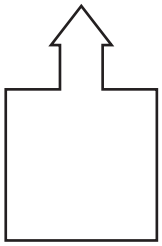


Figure L

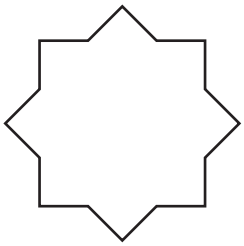


Figure M

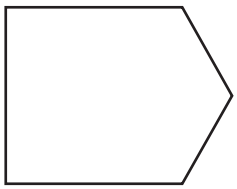


Figure N

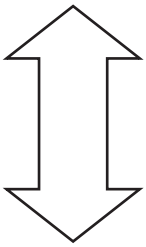


Figure P

Which of these figures appear to have both a horizontal line of symmetry and a vertical line of symmetry?

A Figure M only

B Figure L and Figure N

C Figure M and Figure P only

D Figure L, Figure M, and Figure P

---

18 Mrs. Owen ordered two foot-long sandwiches for her three children to share. The picture shows the two sandwiches cut in half. Each child ate half a sandwich.

Which fraction represents the number of sandwiches the children ate?

F $\frac{3}{2}$

G $\frac{2}{3}$

H $\frac{4}{2}$

J $\frac{3}{6}$

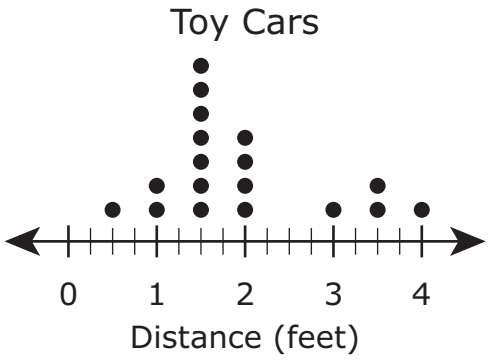
19 Students pushed toy cars to see how far they would roll. The table shows the number of cars that rolled different distances.

Toy Cars

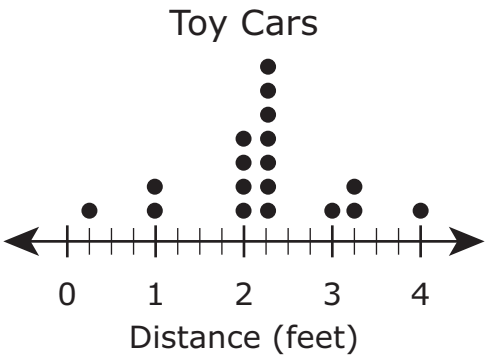
Distance (feet)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Number of Cars	1	2	0	4	7	1	2	1

Which dot plot represents the data in the table?

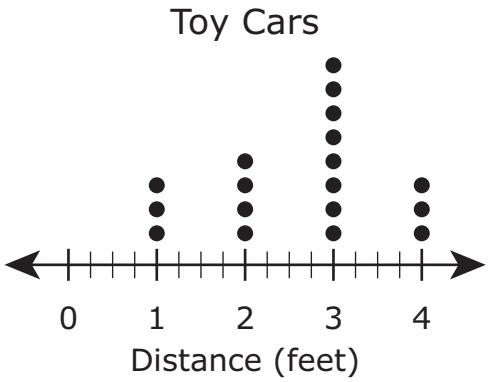
A



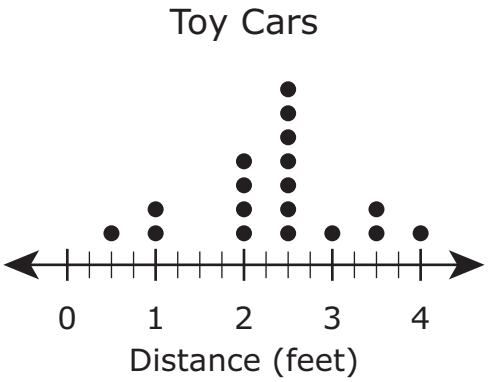
C



B



D



20 Landry drew a flag with exactly one pair of perpendicular sides. Which of these could be the shape of the flag?

F Right triangle

G Acute triangle

H Rectangle

J Square

21 Kristine has a $10 bill to spend at a book fair. She buys one book for $4.95, two bookmarks for $0.65 each, and a key chain for $1.85.

How much change should Kristine receive from her $10 bill?

A $2.55

B $2.10

C $3.45

D $1.90

---

22 A dictionary has a mass of about 2.5 kg. Which object has a mass closest to the mass of a dictionary?

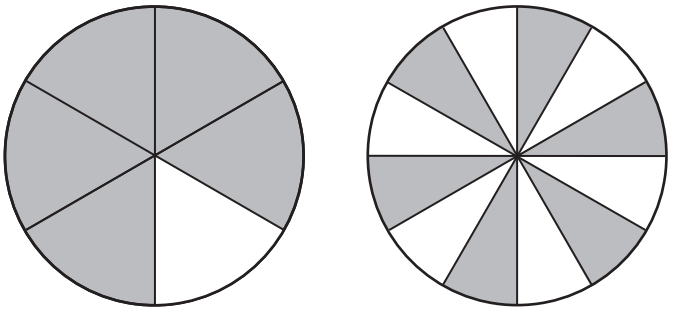
F Bicycle

G Pair of boots

H Refrigerator

J Bag of chips

23 The models are shaded to represent two fractions.



Which statement correctly compares these two fractions?

A $\frac{5}{6} > \frac{6}{12}$

B $\frac{5}{6} = \frac{6}{12}$

C $\frac{5}{6} < \frac{6}{12}$

D None of these

24 The table shows the number of cartons of milk the school cafeteria sold each day last week.

Milk

Day	Number of Cartons Sold
Monday	352
Tuesday	426
Wednesday	449
Thursday	373
Friday	402

Which of these is the best estimate of the number of cartons of milk the cafeteria sold last week?

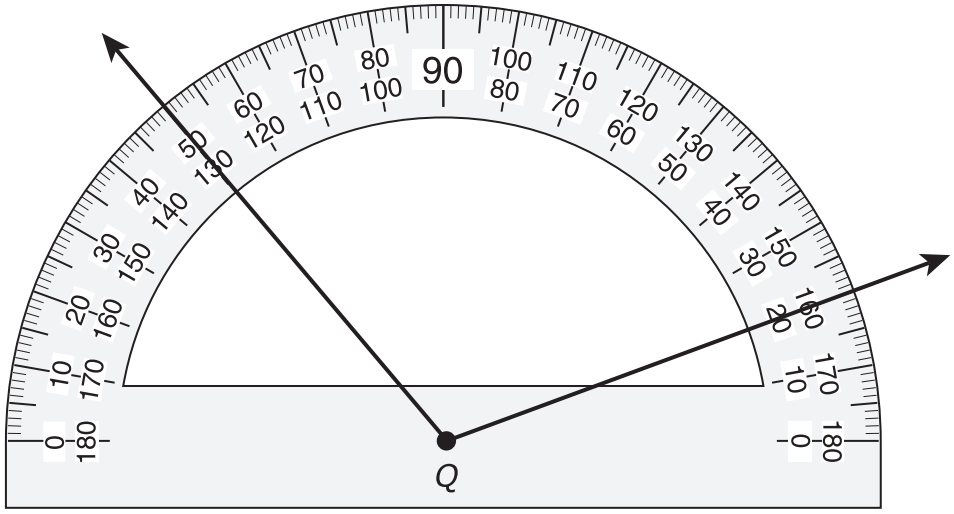
F 400

G 1,800

H 2,000

J 2,500

25 Angle *Q* is shown on this protractor.



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

A 70°, because 50° plus 20° equals 70°

B 150°, because 130° plus 20° equals 150°

C 30°, because 160° minus 130° equals 30°

D 110°, because 160° minus 50° equals 110°

---

26 Mr. Evans will deliver a total of 168 cases of soda to 7 different grocery stores today. He will deliver the same number of cases to each store.

How many cases of soda will Mr. Evans deliver to each store?

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

27 The number 47.06 can be expressed as —

A $(4 \times 10) + (7 \times 1) + (6 \times 0.01)$

B $(4 \times 10) + (7 \times 1) + (6 \times 0.1)$

C $(4 \times 1) + (7 \times 1) + (0 \times 1) + (6 \times 1)$

D $(4 \times 10) + (7 \times 1) + (0 \times 10) + (6 \times 100)$

---

28 Valerie had a jug that contained 128 fl oz of salsa to put into bowls at a restaurant. She filled each bowl with 6 fl oz of salsa until there was not enough salsa left in the jug to completely fill another bowl.

How many fluid ounces of salsa were left in the jug?

F 22 fl oz

G 21 fl oz

H 122 fl oz

J 2 fl oz

29 Lela made a triangle that had one 90° angle and two acute angles. Which term describes Lela's triangle?

A Right triangle, because there is one 90° angle

B Acute triangle, because there are two acute angles

C Obtuse triangle, because the largest angle is obtuse

D Right triangle, because all three angles are 90°

---

30 The weights of four hippos at a zoo are listed.

- Hippo W: 3,894 lb
- Hippo X: 3,648 lb
- Hippo Y: 3,699 lb
- Hippo Z: 3,806 lb

If the hippos are listed in order from least weight to greatest weight, which hippo would come third in the list?

F Hippo W, because $3{,}806 < 3{,}648 < 3{,}894 < 3{,}699$

G Hippo X, because $3{,}806 < 3{,}894 < 3{,}648 < 3{,}699$

H Hippo Y, because $3{,}894 < 3{,}648 < 3{,}699 < 3{,}806$

J Hippo Z, because $3{,}648 < 3{,}699 < 3{,}806 < 3{,}894$

31 The table shows the total numbers of runs different baseball teams scored in one season.

Baseball Runs Scored

Team	Total Number of Runs Scored
R	61
S	92
T	100
U	65
V	72
W	64
X	84

Which stem and leaf plot displays these data?

A

Baseball Runs Scored

Stem	Leaf
6	1
9	2
10	0
6	5
7	2
6	4
8	4

6|1 means 61 runs.

C

Baseball Runs Scored

Stem	Leaf
6	1 4 5
7	2
8	4
9	2
10	

6|1 means 61 runs.

B

Baseball Runs Scored

Stem	Leaf
6	1 4 5
7	2
8	4
9	2
10	0

6|1 means 61 runs.

D

Baseball Runs Scored

Stem	Leaf
6	1
6	5
6	4
7	2
8	4
9	2
10	0

6|1 means 61 runs.

32 In science class Douglas measured the mass of a rock in kilograms. The mass of the rock was 0.26 kg. Which fraction is equivalent to this number?

F $\frac{26}{100}$

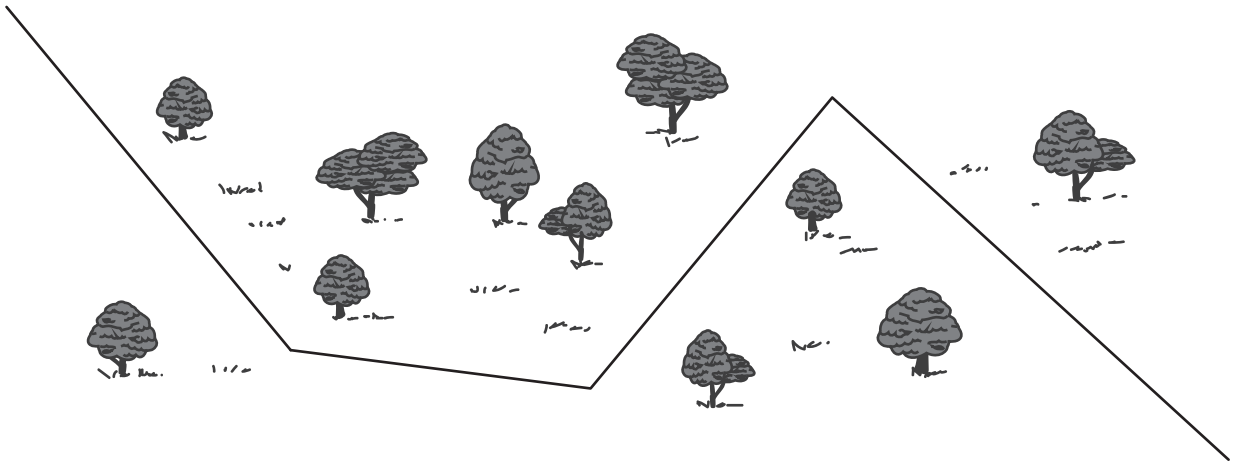
G $\frac{26}{10}$

H $2\frac{6}{100}$

J $2\frac{1}{6}$

---

33 In the diagram below, the line segments represent four parts of a walking trail in a park. Use the ruler provided to measure the length of each line segment to the nearest centimeter.



Which measurement is closest to the total length in centimeters of the walking trail shown in the diagram?

A 9 cm

B 26 cm

C 22 cm

D 18 cm

34 Ms. Gonzales packs 45 boxes with limes. Each box holds 100 limes. How many limes can Ms. Gonzales pack into these boxes?

F 4,005

G 450

H 145

J 4,500

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	1	Readiness	4.2(G)	C
2	4	Supporting	4.9(B)	G
3	1	Readiness	4.2(B)	A
4	2	Supporting	4.4(D)	H
5	3	Readiness	4.6(D)	D
6	2	Readiness	4.3(E)	F
7	1	Supporting	4.2(D)	560
8	3	Readiness	4.5(D)	F
9	2	Readiness	4.5(B)	D
10	3	Readiness	4.7(C)	H
11	2	Readiness	4.5(A)	A
12	1	Supporting	4.3(G)	J
13	4	Supporting	4.10(B)	C
14	1	Readiness	4.3(D)	J
15	3	Readiness	4.5(D)	116
16	2	Readiness	4.4(H)	J
17	3	Supporting	4.6(B)	C
18	2	Readiness	4.3(E)	F
19	4	Readiness	4.9(A)	D
20	3	Readiness	4.6(D)	F
21	2	Readiness	4.4(A)	D
22	3	Supporting	4.8(A)	G
23	1	Readiness	4.3(D)	A
24	2	Supporting	4.4(G)	H
25	3	Readiness	4.7(C)	D
26	2	Supporting	4.4(F)	24
27	1	Readiness	4.2(B)	A
28	2	Readiness	4.4(H)	J
29	3	Supporting	4.6(C)	A
30	1	Supporting	4.2(C)	J
31	4	Readiness	4.9(A)	B
32	1	Readiness	4.2(G)	F
33	3	Readiness	4.8(C)	C
34	2	Supporting	4.4(B)	J

2017 STAAR Grade 4 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
1	A is incorrect because 6/10 = 0.6, not 6.1.	B is incorrect because 6/10 = 0.6, not 6.01.	C is correct because 6/10 = 0.6 since 6 is in the tenths place.	D is incorrect because 6 is in the hundredths place, not in the tenths place.
2	F is incorrect because 4.5 - 0.8 = 3.7, not 4.3.	G is correct because the highest, 4.5, minus the lowest, 0.8, is equal to 3.7.	H is incorrect because 4.5 - 0.8 = 3.7, not 0.25.	J is incorrect because 4.5 - 0.8 = 3.7, not 0.47.
3	A is correct because (3 x 1,000) is 3,000, (1 x 100) is 100, and (7 x 10) is 70. All added together closely describe 3,175.02.	B is incorrect because (3 x 1,000) is 3,000, (1 x 100) is 100, and (7 x 10) is 70. All added together do not describe 93,075.01.	C is incorrect because (3 x 1,000) is 3,000, (1 x 100) is 100, and (7 x 10) is 70. All added together do not describe 3,651.70.	D is incorrect because (3 x 1,000) is 3,000, (1 x 100) is 100, and (7 x 10) is 70. All added together do not describe 9,372.01.
4	F is incorrect because 27 x 16 = 432, not 162.	G is incorrect because 27 x 16 = 432, not 189.	H is correct because 27 x 16 = 432.	J is incorrect because 27 x 16 = 432, which is answer choice C.
5	A is incorrect because none of the polygons have perpendicular lines. Only the octagon and hexagon have parallel lines but not the pentagon.	B is incorrect because none of the polygons have perpendicular lines.	C is incorrect because all the polygons have obtuse angles, but none of them have acute angles.	D is correct because all the polygons have obtuse angles.
6	F is correct because 7/10 - 3/10 = 4/10.	G is incorrect because 7/10 - 3/10 = 4/10, not 4/7.	H is incorrect because 7/10 - 3/10 = 4/10, not 7/10.	J is incorrect because 7/10 - 3/10 = 4/10, not 3/4.
7	A; The correct answer is 560 because 557 rounded to the nearest ten is 560.	B; Students may have rounded to the nearest hundred to get 600.		
8	F is correct because the length is about 5 and the width is about 3. The area is closest to 5 x 3 = 15.	G is incorrect because the area is closest to 5 x 3 = 15, not 96.	H is incorrect because the area is closest to 5 x 3 = 15, not 24.	J is incorrect because the area is closest to 5 x 3 = 15, not 16.
9	A is incorrect because the numbers under the position column should be 1, 2, 3, and 4, not 38.	B is incorrect because the numbers under the position column should be 1, 2, 3, and 4, not 38, and the value column as 39, 40, 41, and 42, not 38.	C is incorrect because while the numbers under the position column are 1, 2, 3, and 4, following the rule, + 38 should generate the numbers under the value column as 39, 40, 41, and 42, not 38.	D is correct because the numbers under the position column are 1, 2, 3, and 4. Following the rule, + 38 generates a pattern equal to the numbers under the value column which are 39, 40, 41, and 42.
10	F is incorrect because the angle measures 23°. This measurement is true.	G is incorrect because the angle measures 23°. This measurement is true.	H is correct because the angle measures 28°. This measurement is NOT 23°.	J is incorrect because the angle measures 23°. This measurement is true.
11	A is correct because the number of cans collected in the first year, 8,917, and the number of cans collected in the second year, 7,639, should be subtracted from the total number of cans collected in three years, 25,413, to find the number of cans collected in the third year.	B is incorrect because the number of cans collected in the first year, 8,917, and the number of cans collected in the second year, 7,639, should be subtracted from the total number of cans collected in three years, 25,413, to find the number of cans collected in the third year.	C is incorrect because the number of cans collected in the first year, 8,917, and the number of cans collected in the second year, 7,639, should be subtracted from the total number of cans collected in three years, 25,413, to find the number of cans collected in the third year.	D is incorrect because the number of cans collected in the first year, 8,917, and the number of cans collected in the second year, 7,639, should be subtracted from the total number of cans collected in three years, 25,413, to find the number of cans collected in the third year.

2017 STAAR Grade 4 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
12	F is incorrect because point *Q* does not represent a distance of about 2.98 units from 0. Point *Q* represents a distance of about 1.01.	G is incorrect because point *Q* does not represent a distance of about 2.98 units from 0. Point *Q* represents a distance of about 2.5.	H is incorrect because point *Q* does not represent a distance of about 2.98 units from 0. Point *Q* represents a distance of about 1.98.	J is correct because point *Q* best represents a distance of about 2.98 units from 0.
13	A is incorrect because 10.29 should be subtracted from 21.75, not added to 21.75.	B is incorrect because 21.75 - 10.29 = 11.46, not 21.75, which is the money Zoey received from the sale of the snacks.	C is correct because 21.75 - 10.29 = 11.46, which is Zoey's profit.	D is incorrect because 21.75 - 10.29 = 11.46, not 10.29, which is the cost of preparing the snacks.
14	F is incorrect because 4/5 is greater than 5/10, not less than 5/10.	G is incorrect because 4/5 is greater than 3/4, not less than 3/4.	H is incorrect because 3/4 is greater than 5/10, not less than 5/10.	J is correct because 3/4 is less than 4/5.
15	A; The correct answer is 116 because the perimeter of the square playground is 4 x 29 = 116.	B; Students may have multiplied 29 x 3 = 87 or 29 x 2 = 58.		
16	F is incorrect because 76 x 24 = 1,824 should be divided by 3, not multiplied by 3.	G is incorrect because 76 x 24 = 1,824, not 300.	H is incorrect because 76 x 24 = 1,824, then 1,824 ÷ 3 = 608, not 1,824.	J is correct because 76 x 24 = 1,824, then 1,824 ÷ 3 = 608.
17	A is incorrect because it lists only Figure M but not Figure P and both have horizontal and vertical lines of symmetry.	B is incorrect because it lists Figure L, which has only a vertical line of symmetry, and Figure N, which has only a horizontal line of symmetry.	C is correct because Figure M and Figure P have both a horizontal line of symmetry and a vertical line of symmetry.	D is incorrect because it lists Figure L, which has only a vertical line of symmetry.
18	F is correct because 1/2 + 1/2 + 1/2 = 3/2.	G is incorrect because 1/2 + 1/2 + 1/2 = 3/2, not 2/3.	H is incorrect because 1/2 + 1/2 + 1/2 = 3/2, not 4/2.	J is incorrect because 1/2 + 1/2 + 1/2 = 3/2, not 3/6.
19	A is incorrect because it shows seven dots on 1 1/2; there should not be any dot on 1 1/2.	B is incorrect because it shows no dot on 1/2, it shows an extra dot on 1, no dots on 2 1/2, seven extra dots on 3, no dots on 3 1/2, and two extra dots on 4.	C is incorrect because it shows a dot on 1/4, instead of 1/2; seven dots on 2 1/4, instead of 2 1/2; and 2 dots on 3 1/4, instead of 3 1/2.	D is correct because it shows all 18 dots in the table correctly placed on the dot plot.
20	F is correct because a right triangle has exactly one pair of perpendicular sides.	G is incorrect because an acute triangle has no perpendicular sides.	H is incorrect because a rectangle has two pairs of perpendicular sides.	J is incorrect because a square has two pairs of perpendicular sides.
21	A is incorrect because 4.95 + (2 x 0.65) + 1.85 = 8.10, then 10.00 - 8.10 = 1.90, not 2.55.	B is incorrect because 4.95 + (2 x 0.65) + 1.85 = 8.10, then 10.00 - 8.10 = 1.90, not 2.10.	C is incorrect because 4.95 + (2 x 0.65) + 1.85 = 8.10, then 10.00 - 8.10 = 1.90, not 3.45.	D is correct because 4.95 + (2 x 0.65) + 1.85 = 8.10, then 10.00 - 8.10 = 1.90.
22	F is incorrect because the mass of a dictionary is about 2.5 kg, and the mass of a bicycle is greater than 2.5 kg.	G is correct because the mass of a dictionary is about 2.5 kg, and the mass of a pair of boots is closest to 2.5 kg.	H is incorrect because the mass of a dictionary is about 2.5 kg, and the mass of a refrigerator is greater than 2.5 kg.	J is incorrect because the mass of a dictionary is about 2.5 kg, and the mass of a bag of chips is less than 2.5 kg.
23	A is correct because 5/6 is greater than 6/12.	B is incorrect because 5/6 is greater than 6/12, not equal to 6/12.	C is incorrect because 5/6 is greater than 6/12, not less than 6/12.	D is incorrect because 5/6 is greater than 6/12 and is correctly represented in answer choice A.

2017 STAAR Grade 4 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
24	F is incorrect because 400 + 400 + 400 + 400 + 400 = 2,000, not 400.	G is incorrect because 400 + 400 + 400 + 400 + 400 = 2,000, not 1,800.	H is correct because 400 + 400 + 400 + 400 + 400 = 2,000.	J is incorrect because 400 + 400 + 400 + 400 + 400 = 2,000, not 2,500.
25	A is incorrect because 160° - 50° = 110°, not 70°.	B is incorrect because 160° - 50° = 110°, not 150°.	C is incorrect because 160° - 50° = 110°, not 30°.	D is correct because 160° - 50° = 110°.
26	F; The correct answer is 24 because 168 ÷ 7 = 24.	G; Students may have added 168 + 7 = 175.		
27	A is correct because (4 x 10) is 40, (7 x 1) is 7, and (6 x 0.01) is 0.06 which are added together and expressed as 47.06.	B is incorrect because (4 x 10) is 40, (7 x 1) is 7, and (6 x 0.1) is 0.6 which are added together and expressed as 47.6, not 47.06.	C is incorrect because (4 x 1) is 4, (7 x 1) is 7, and (0 x 1) is 0, and (6 x 1) is 6 which are added together and expressed as 17, not 47.06.	D is incorrect because (4 x 10) is 40, (7 x 1) is 7, (0 x 10) is 0, and (6 x 100) is 600 which are added together and expressed as 647, not 47.06.
28	F is incorrect because 128 ÷ 6 = 21 remainder 2. Two fluid ounces are left, not 22.	G is incorrect because 128 ÷ 6 = 21 remainder 2. Two fluid ounces are left, not 21.	H is incorrect because 128 ÷ 6 = 21 remainder 2.Two fluid ounces are left, not 122.	J is correct because 128 ÷ 6 = 21 remainder 2. Two fluid ounces are left.
29	A is correct because a right triangle has one 90° angle and two acute angles.	B is incorrect because an acute triangle does not have a 90° angle. It has three acute angles.	C is incorrect because an obtuse triangle does not have a 90° angle. It has two acute angles and one obtuse angle.	D is incorrect because a right triangle has two acute angles and one 90° angle, not three 90° angles.
30	F is incorrect because the numbers are not listed in order from least weight to greatest weight. Hippo Z should be third, not Hippo W.	G is incorrect because the numbers are not listed in order from least weight to greatest weight. Hippo Z should be third, not Hippo X.	H is incorrect because the numbers are listed in order from greatest weight to least weight. Hippo Z should be third, not Hippo Y.	J is correct because the numbers are listed in order from least weight to greatest weight. Hippo Z is third in the list.
31	A is incorrect because it does not represent the data in the table correctly in the stem and leaf plot.	B is correct because it represents the data in the table correctly in the stem and leaf plot.	C is incorrect because 100 is not represented correctly in the stem and leaf plot.	D is incorrect because it does not represent the data in the table correctly in the stem and leaf plot.
32	F is correct because 0.26 is equivalent to 26/100.	G is incorrect because 0.26 is equivalent to 26/100, not 26/10.	H is incorrect because 0.26 is equivalent to 26/100, not 2 6/100.	J is incorrect because 0.26 is equivalent to 26/100, not 2 1/6.
33	A is incorrect because 6 + 4 + 5 + 7 = 22, not 9.	B is incorrect because 6 + 4 + 5 + 7 = 22, not 26.	C is correct because 6 + 4 + 5 + 7 = 22.	D is incorrect because 6 + 4 + 5 + 7 = 22, not 18.
34	F is incorrect because 45 x 100 = 4,500, not 4,005.	G is incorrect because 45 x 100 = 4,500, not 450.	H is incorrect because 45 x 100 = 4,500, not 145.	J is correct because 45 x 100 = 4,500.