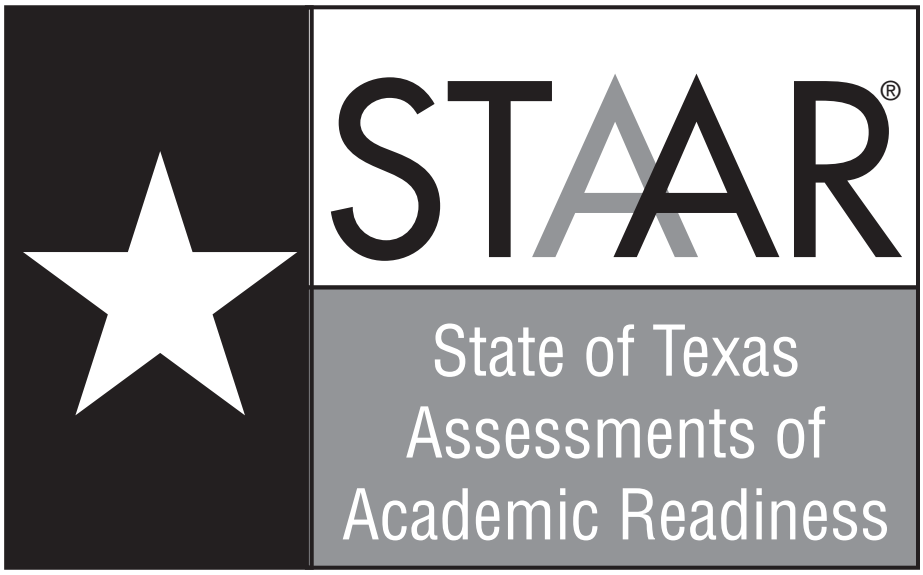


GRADE 4

Mathematics

Administered May 2018

RELEASED

Copyright © 2018, Texas Education Agency. All rights reserved. Reproduction of all or portions of this work is prohibited without express written permission from the Texas Education Agency.

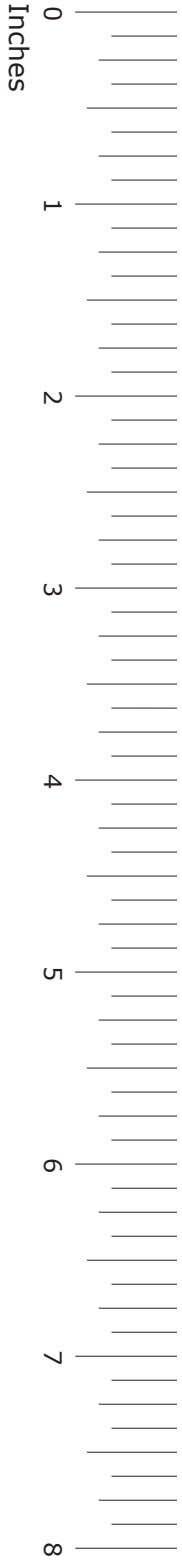
STAAR GRADE 4 MATHEMATICS REFERENCE MATERIALS

PERIMETER

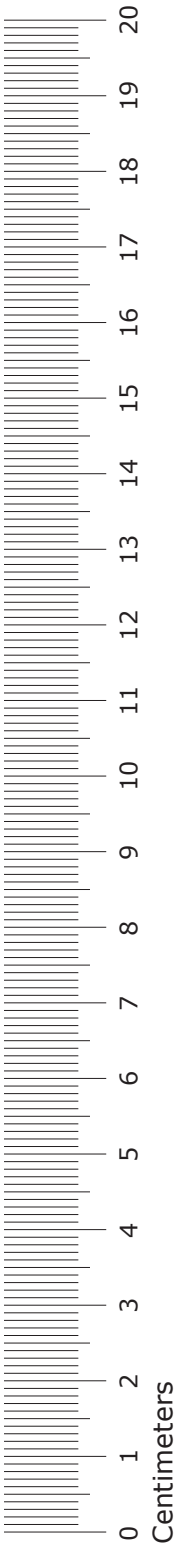
Square			$P = 4s$
Rectangle	$P = l + w + l + w$	or	$P = 2l + 2w$

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

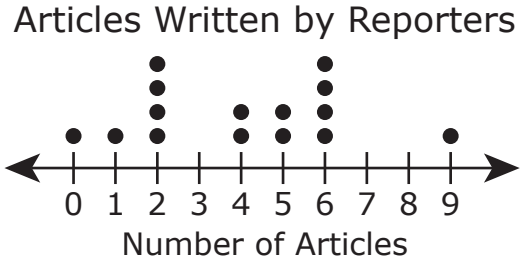
Read each question carefully. For a multiple-choice question, determine the best answer to the question from the four answer choices provided. For a griddable question, determine the best answer to the question. Then fill in the answer on your answer document.

1 The list shows the number of articles written by different reporters at a newspaper last month.

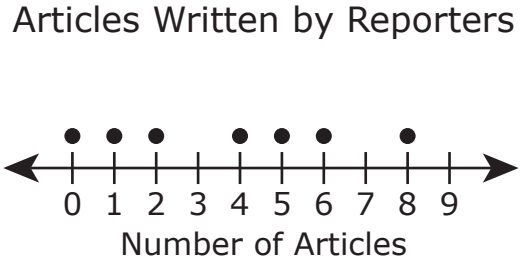
6, 2, 5, 2, 6, 0, 4, 6, 1, 8, 5, 2, 6, 4, 2

Which dot plot displays the same data?

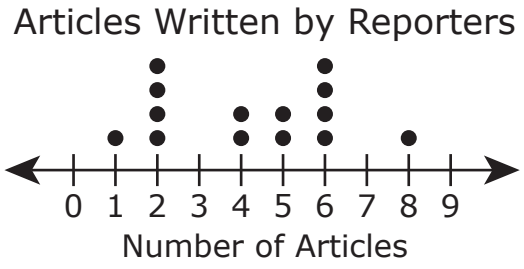
A



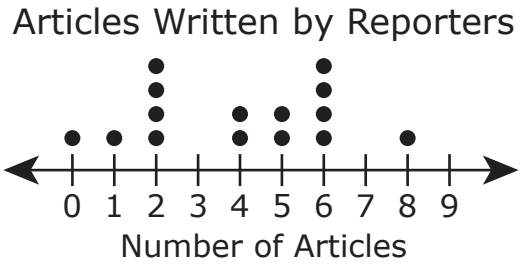
C



B



D



---

2 Rita bought three and forty-eight hundredths pounds of bananas at the store. How is this number written in expanded notation?

F $(3 \times 1) + (4 \times 0.1) + (8 \times 0.01)$

G $(3 \times 100) + (4 \times 10) + (8 \times 1)$

H $(3 \times 1) + (4 \times 0.01) + (8 \times 0.1)$

J $(3 \times 100) + (4 \times 0.1) + (8 \times 0.01)$

3 Hannah drew straight lines on her driveway with chalk. The table shows the lengths of the lines.

Hannah's Chalk Lines

Line	Length (meters)
P	1.8
Q	4.05
R	7
S	7.75

What is the difference in meters between the length of Line S and the length of Line P?

A 7.57 m

B 5.95 m

C 3.70 m

D 6.15 m

---

4 Which figures appear to have 2 or more lines of symmetry?

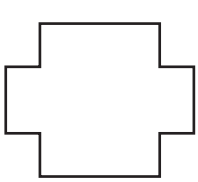


Figure K

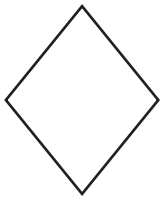


Figure L

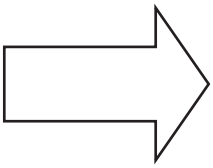


Figure M

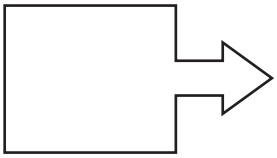


Figure N

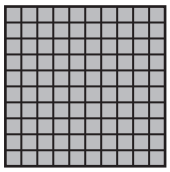
F Figures K and L only

G Figures M and N only

H Figures K, L, and N only

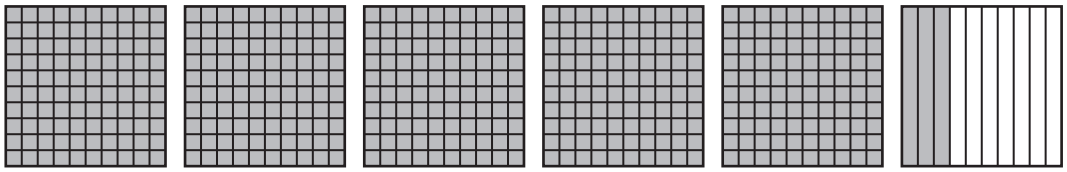
J Figures K, L, M, and N

5 This model is shaded to represent 1 whole.

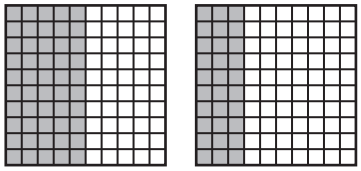


Zack drew a model that was shaded to represent 0.53. Which model could Zack have drawn?

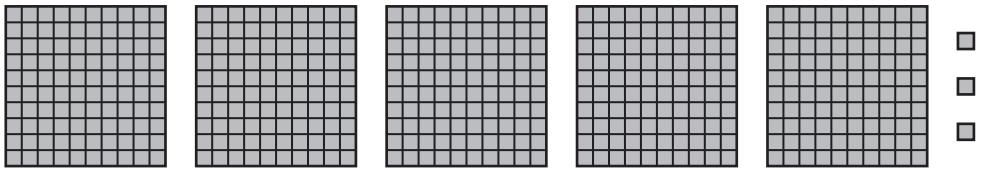
A



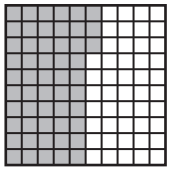
B



C



D



6 Fran bought 4 shirts that were $13 each. She also bought a pair of socks for $4.29.

What was the total amount Fran paid for the shirts and socks?

F $21.29

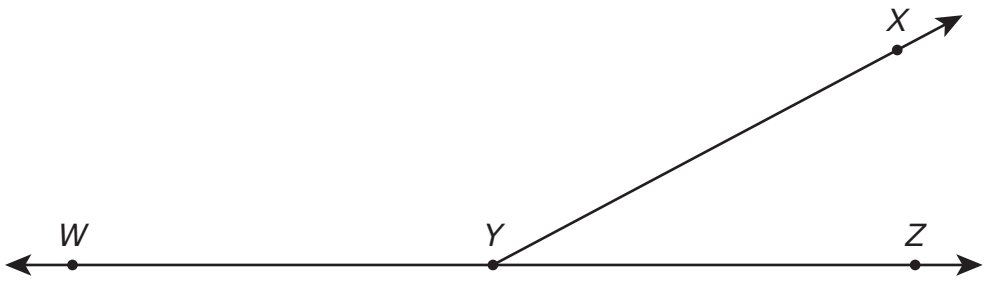
G $56.29

H $69.16

J Not here

---

7 Angle *XYZ* and angle *XYW* have a combined measure of 180°.



The measure of angle *XYZ* is 28°. What is the measure of angle *XYW* in degrees?

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

8 A number pattern begins with these values.

6, 12, 18, 24, . . .

Which table correctly represents the relationship between the position of a number in the pattern and the value of that number?

F

Position	Numerical Expression	Value
6	6×1	6
12	12×1	12
18	18×1	18
24	24×1	24

H

Position	Numerical Expression	Value
6	$6 \div 6$	1
12	$12 \div 6$	2
18	$18 \div 6$	3
24	$24 \div 6$	4

G

Position	Numerical Expression	Value
1	$1 + 6$	7
2	$2 + 6$	8
3	$3 + 6$	9
4	$4 + 6$	10

J

Position	Numerical Expression	Value
1	1×6	6
2	2×6	12
3	3×6	18
4	4×6	24

---

9 The thickness of Jacob's cell phone is $\frac{3}{8}$ inch. The thickness of Crosby's cell phone is less than Jacob's.

Which measurement could be the thickness of Crosby's cell phone?

A $\frac{2}{5}$ inch

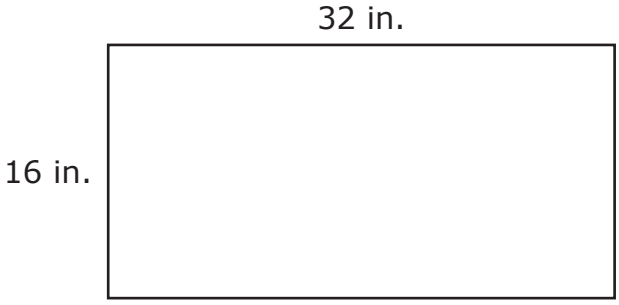
B $\frac{4}{7}$ inch

C $\frac{1}{3}$ inch

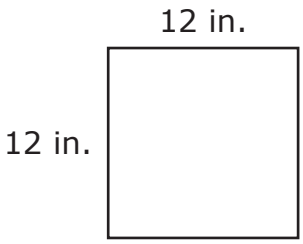
D $\frac{5}{6}$ inch

10 Keith made a rectangular sign that had a perimeter of 48 inches. Which model could represent the sign Keith made?

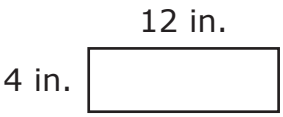
F



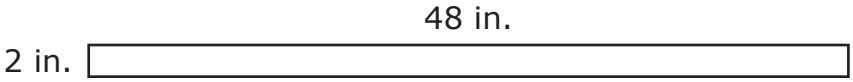
G



H



J



---

11 Darren drank 3 glasses of water every day for 6 days. Each glass contained 12 fl oz of water.

Which equation represents *w,* the total amount of water in fluid ounces that Darren drank during these 6 days?

A $3 + 6 + 12 = w$

B $12 \times 6 = w$

C $3 \times 6 \times 12 = w$

D $3 \times 12 \div 6 = w$

12 The table shows the chores Randy did Saturday morning and the amount of time he spent on each chore.

Randy's Chores

Chore	Amount of Time (minutes)
Sweeping the garage	40
Raking the yard	55
Cleaning tools	35
Washing the car	45
Weeding the garden	30

How much time did Randy spend doing these chores?

F 3 hours 25 minutes

G 3 hours 30 minutes

H 2 hours 5 minutes

J 2 hours 45 minutes

13 A stadium sold 33,300 tickets to a concert. Which statement about this number is true?

A The value of the digit in the tens place is 10 times the value of the digit in the hundreds place.

B The value of the digit in the thousands place is $\frac{1}{10}$ the value of the digit in the ten thousands place.

C The value of the digit in the hundreds place is 10 times the value of the digit in the thousands place.

D The value of the digit in the ten thousands place is $\frac{1}{10}$ the value of the digit in the hundreds place.

---

14 The table shows different numbers of feet and the equivalent numbers of yards.

Equivalent Distances

Number of Yards	Number of Feet
5	15
15	45
25	75
35	105

Joey walked 333 feet. How many yards did Joey walk?

F 999 yd

G 363 yd

H 111 yd

J 193 yd

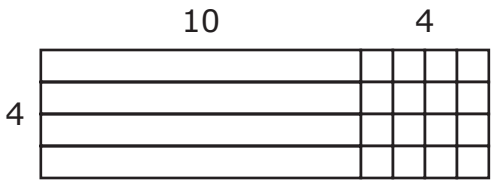
15 A bag of snack mix weighs $8\frac{9}{100}$ ounces. What decimal is equivalent to $8\frac{9}{100}$?

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

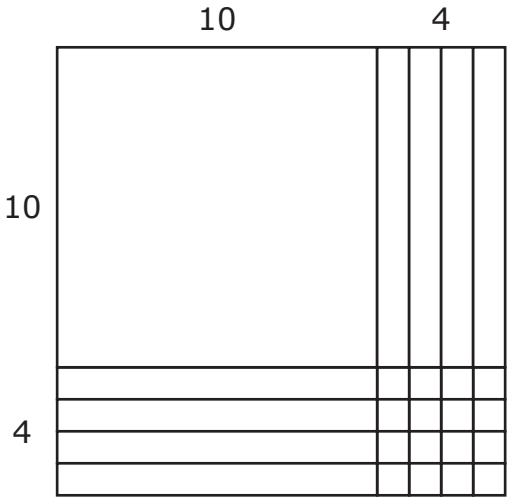
---

16 Which model represents $14 \times 14 = 196$?

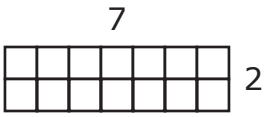
F



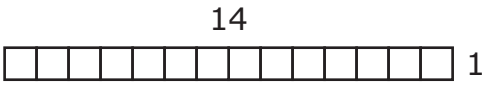
H



G



J



GO ON

17 The table shows the amounts Sheldon and Jenna paid for electricity in their apartments each month for the last six months.

Electricity Expenses

Month	Amount Sheldon Paid	Amount Jenna Paid
January	$89.99	$112.37
February	$89.99	$87.21
March	$89.99	$90.87
April	$89.99	$105.82
May	$89.99	$121.13
June	$89.99	$130.45

Based on the table, which statement is true about the amounts Sheldon and Jenna paid for electricity during these six months?

A Only Sheldon's electricity expense was a fixed expense.

B Only Jenna's electricity expense was a fixed expense.

C Both Sheldon's electricity expense and Jenna's electricity expense were variable expenses.

D Both Sheldon's electricity expense and Jenna's electricity expense were fixed expenses.

18 The number of each kind of flower in a vase is shown.

Daisies

Roses

Tulips

Which expression can be used to find the fraction of flowers in the vase that are daisies or tulips?

F $\frac{6}{6} + \frac{5}{5}$

G $\frac{4}{4} + \frac{5}{5}$

H $\frac{6}{15} + \frac{5}{15}$

J $\frac{4}{15} + \frac{5}{15}$

---

19 Hayden drew a polygon that has exactly two right angles. Which of these could be the polygon Hayden drew?

A Right triangle

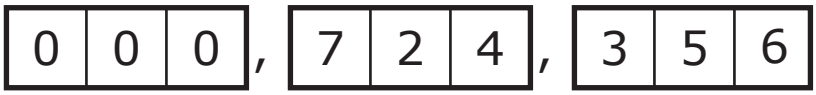
B Right trapezoid

C Rectangle

D Rhombus

20 The counter shows the number of times a website has been visited.

Counter



What is the value of the digit 4 in this number?

F 400

G 40

H 4

J Not here

GO ON

21 Greg sorted his collection of baseball cards.

- Greg will give $\frac{1}{5}$ of his collection to his brother.
- Greg will sell $\frac{4}{10}$ of his collection to a card shop.

Which statement is true?

A Greg will have exactly half his collection left.

B Greg will sell more than half his collection to a card shop.

C Greg will have less than half his collection left.

D Greg will give more than half his collection to his brother.

---

22 The frequency table shows the number of times some people visited a movie theater last year.

Movie Theater Visitors

Number of Visits	Number of People
1–5	IIII
6–10	~~IIII~~
11–15	~~IIII~~
16–20	III

Which set of data could the frequency table represent?

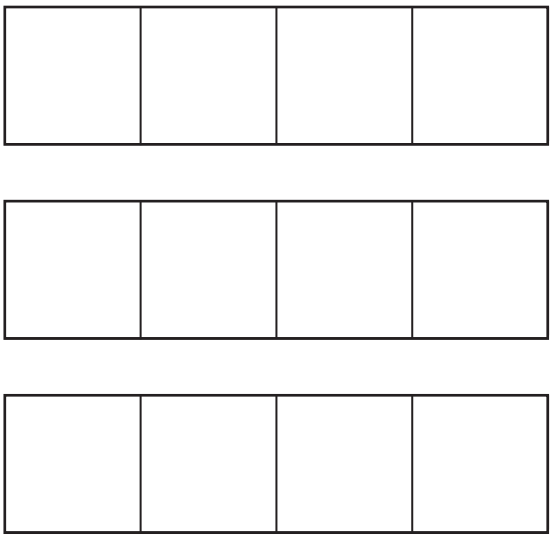
F 1, 2, 2, 3, 6, 7, 7, 9, 12, 12, 12, 14, 17, 18, 20

G 0, 2, 4, 5, 6, 6, 7, 8, 9, 11, 11, 13, 14, 15, 20, 20, 20

H 1, 5, 6, 10, 11, 15, 16, 20, 4, 5, 5, 3

J 2, 2, 4, 5, 6, 6, 7, 8, 9, 11, 11, 13, 14, 15, 20, 20, 20

23 This model can be shaded to represent the fraction $\frac{7}{4}$.



Which number sentence represents two different ways that $\frac{7}{4}$ can be represented with shaded fractions on the model?

A $\frac{2}{4} + \frac{2}{4} + \frac{3}{4} = \frac{5}{4} + \frac{2}{4}$

B $\frac{3}{4} + \frac{4}{4} = \frac{1}{4} + \frac{4}{4} + \frac{1}{4}$

C $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4} + \frac{4}{4}$

D $\frac{2}{4} + \frac{3}{4} + \frac{2}{4} = \frac{7}{4} + \frac{1}{4}$

---

24 Sandy purchased two patio chairs that cost $57.65 each and a table that cost $146.22. What is the total cost of these items?

F $203.87

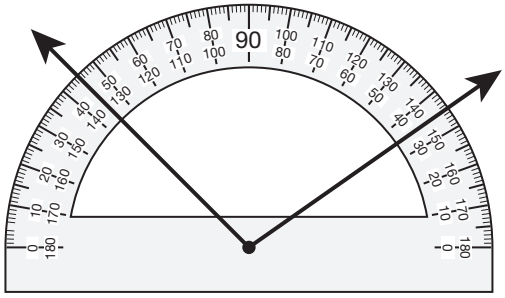
G $350.09

H $140.42

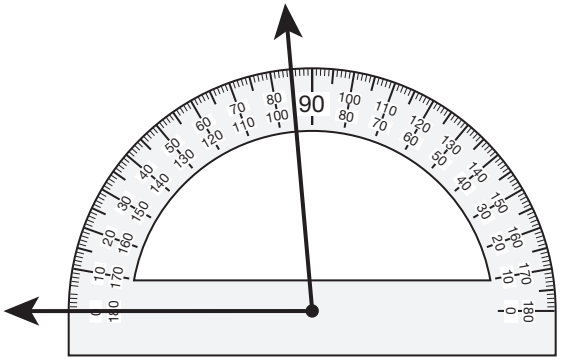
J $261.52

25 Which angle has a measure closest to 95°?

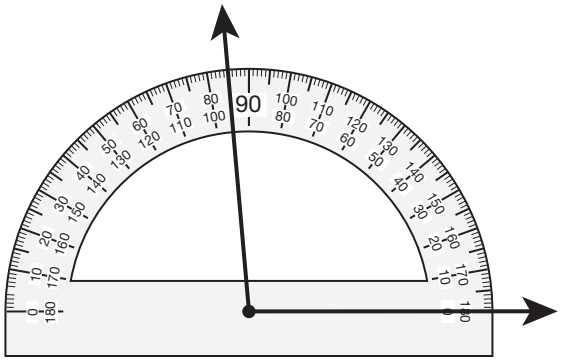
A



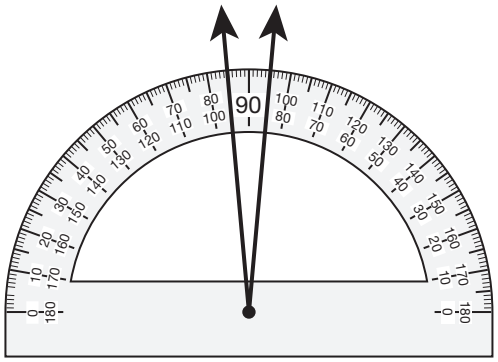
B



C



D



GO ON

26 A teacher put 378 marbles into 9 containers. He put the same number of marbles into each container.

How many marbles did the teacher put into each container?

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

---

27 Kate's pen is 13.7 centimeters long. Which mixed number is equivalent to 13.7?

A $13\frac{1}{7}$

B $13\frac{1}{70}$

C $13\frac{7}{10}$

D $13\frac{7}{100}$

28 A business earned \$96 for one job and \$78 for a second job. The money was divided equally among the 3 partners who own the business.

Which strip diagram represents *m*, the amount of money each partner received?

F

m	*m*	*m*
\$78	\$96	

H

m	*m*	*m*
\$96		

G

m					
\$78	\$96	\$78	\$96	\$78	\$96

J

m	
\$78	\$96

---

29 An office had three baskets of letters ready to be mailed. The first basket was $\frac{2}{10}$ full, the second basket was $\frac{3}{6}$ full, and the third basket was $\frac{1}{5}$ full.

Which comparison is true?

A $\frac{1}{5} > \frac{3}{6}$

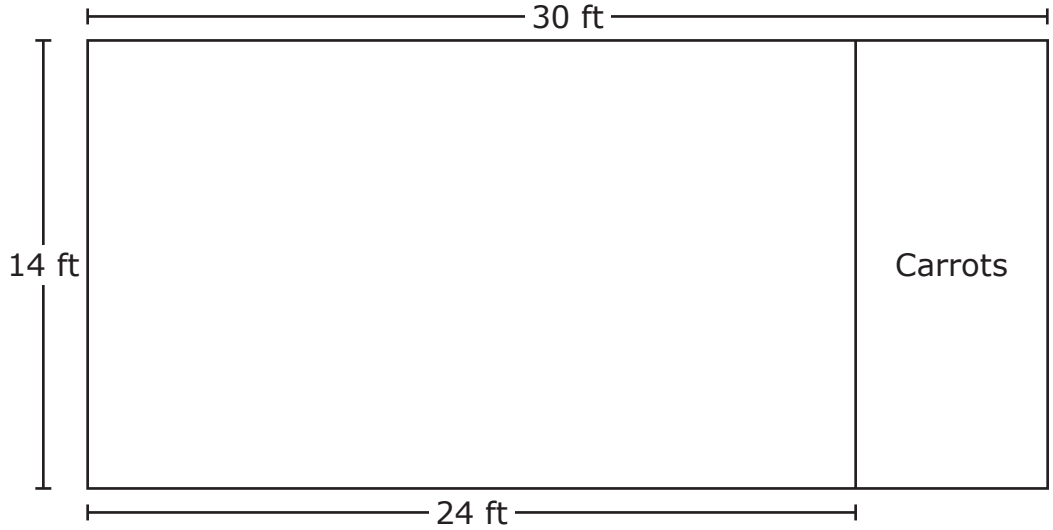
B $\frac{2}{10} = \frac{1}{5}$

C $\frac{3}{6} < \frac{2}{10}$

D $\frac{1}{5} > \frac{2}{10}$

30 The model represents Norman's rectangular backyard garden. Norman will plant carrots in the rectangular section of the garden labeled "Carrots" in the model.

Norman's Garden



What is the area in square feet of the section where Norman will plant carrots?

F 40 square feet

G 224 square feet

H 336 square feet

J 84 square feet

31 The stem and leaf plot shows the numbers of tickets Stephen won when he played games at a carnival.

Number of Tickets Won

Stem	Leaf
8	4 8
9	0 6 8
10	5 5
11	7

9|6 means 96 tickets.

What is the total number of tickets that Stephen won at the carnival?

A 783

B 178

C 81

D 678

---

32 Oscar draws two lines on his paper. The lines are always one inch apart and do not intersect.

Which term can be used to name what Oscar drew?

F Perpendicular lines

G Parallel lines

H Intersecting lines

J Line segments

33 The table shows a relationship between the input numbers and the output numbers generated by a number machine.

Number Machine

Input	Output
1	15
2	16
3	17
4	18

Which number machine shows the same relationship as the one shown in the table?

A Input → + 14 → Output

B Input → × 15 → Output

C Input → × 8 → Output

D Input → + 1 → Output

GO ON

34 Melanie had two $10 bills, one $5 bill, four dimes, and six pennies. Then she bought a fruit cup for $2.19.

How much money did Melanie have after she bought the fruit cup?

F $27.65

G $25.46

H $23.27

J $23.07

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

STOP

STAAR
GRADE 4
Mathematics
May 2018