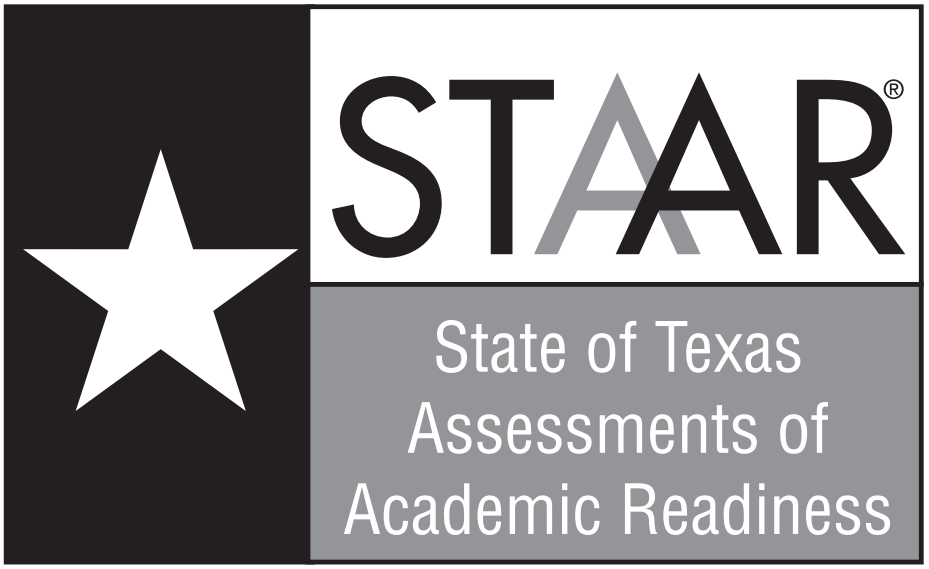


GRADE 5

Mathematics

Administered April 2013

RELEASED

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)

TIME

1 year = 12 months

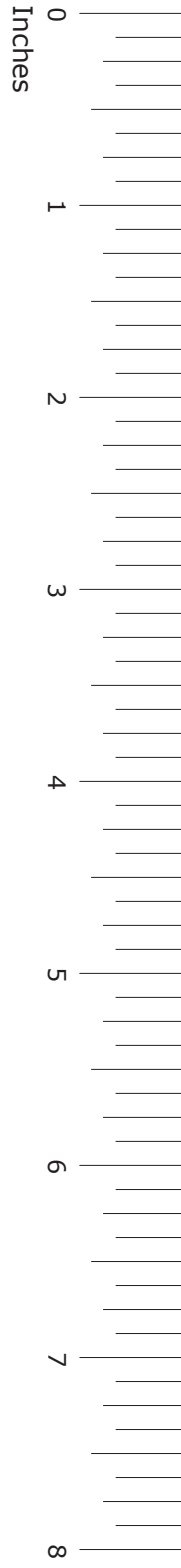
1 year = 52 weeks

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds



STAAR GRADE 5 MATHEMATICS REFERENCE MATERIALS

PERIMETER	
Square	$P = 4 \times s$
Rectangle	$P = (2 \times l) + (2 \times w)$
AREA	
Square	$A = s \times s$
Rectangle	$A = l \times w$
VOLUME	
Cube	$V = s \times s \times s$
Rectangular prism	$V = l \times w \times h$

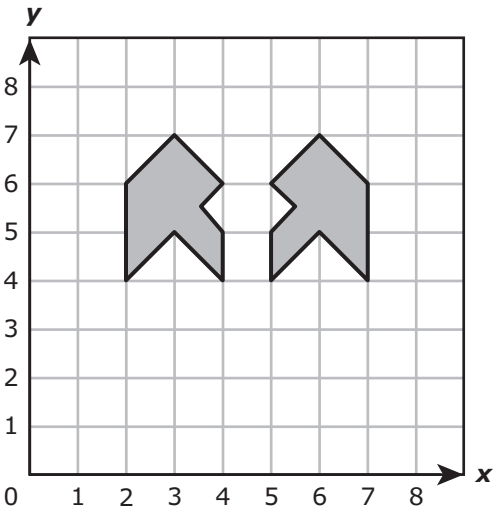
MATHEMATICS

DIRECTIONS

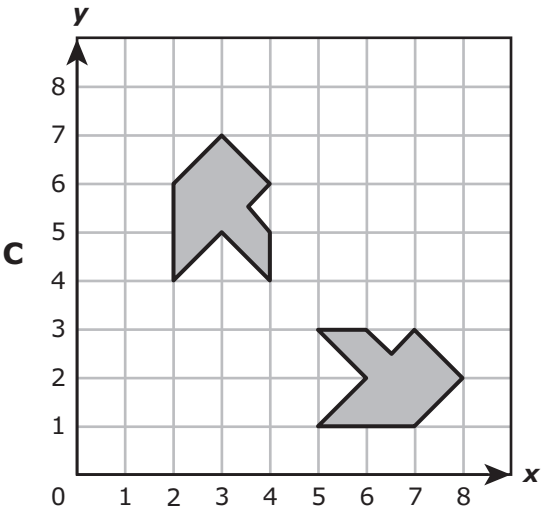
Read each question carefully. For a multiple-choice question, determine the best answer to the question from the four answer choices provided. For a griddable question, determine the best answer to the question. Then fill in the answer on your answer document.

1 Which coordinate grid shows only a translation?

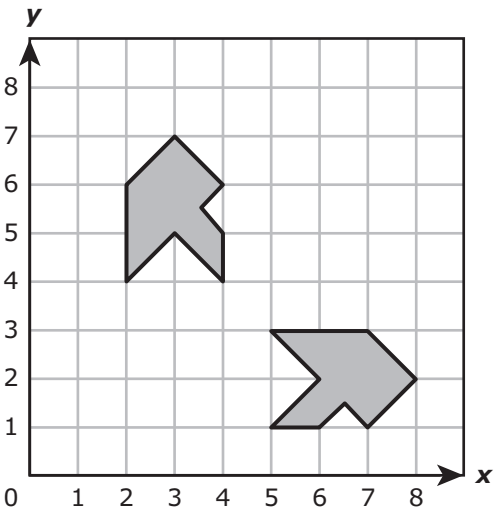
A



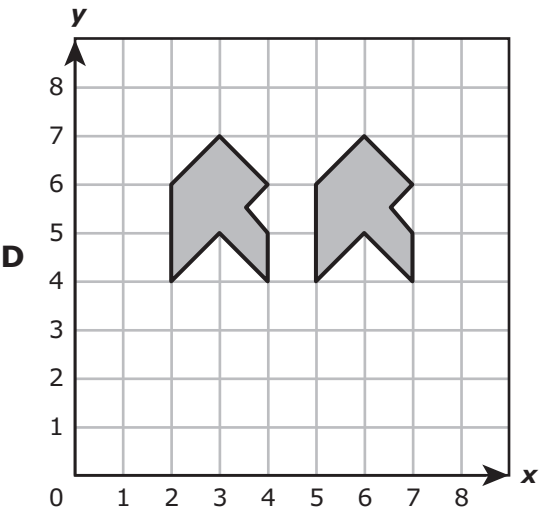
C



B



D



GO ON

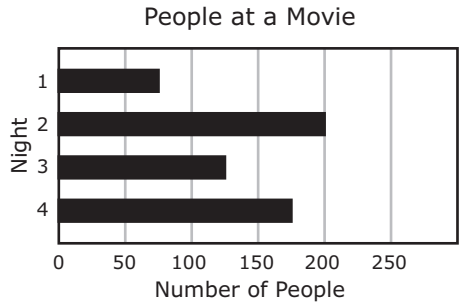
2 The table below shows the number of people who went to a movie each night on four nights.

People at a Movie

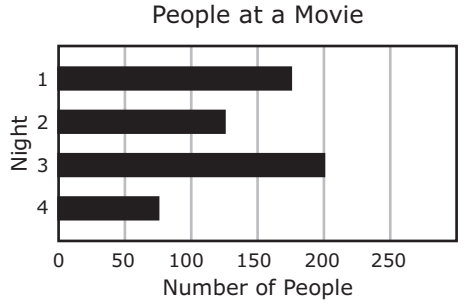
Night	1	2	3	4
Number of People	75	200	125	175

Which graph represents the data in the table?

F



G



H

People at a Movie

Night 1	👤👤👤
Night 2	👤👤👤👤
Night 3	👤👤👤👤👤
Night 4	👤👤👤👤👤👤👤👤

Each 👤 represents 25 people.

J

People at a Movie

Night 1	👤½
Night 2	👤👤👤👤
Night 3	👤👤👤
Night 4	👤👤½

Each 👤 represents 50 people.

GO ON

3 The table below shows the total number of juice bottles in different numbers of boxes.

Juice Bottles

Total Number of Juice Bottles	Number of Boxes
54	3
90	5
108	6
162	9

Which statement describes the relationship between the total number of juice bottles and the number of boxes?

A The total number of juice bottles plus 36 equals the number of boxes.

B The total number of juice bottles divided by 18 equals the number of boxes.

C The total number of juice bottles times 3 equals the number of boxes.

D The total number of juice bottles minus 51 equals the number of boxes.

---

4 Owen lives 145.25 kilometers from Houston, Texas. Sharon lives 209.5 kilometers from Houston. What is the difference between these two distances?

F 64.25 km

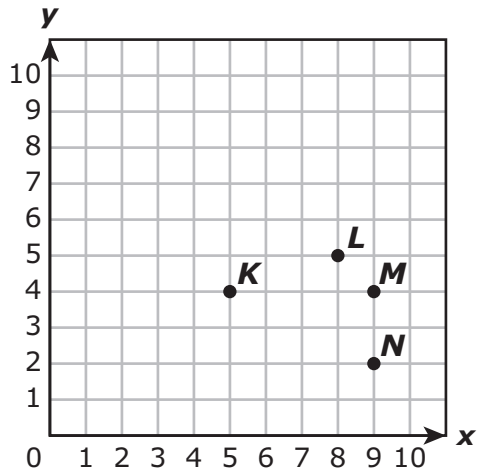
G 54.35 km

H 124.30 km

J 144.35 km

GO ON

5 Billy will place point *W* at the coordinates (7, 6) on the coordinate grid below.



Billy will then circle the point that is 2 units right and 2 units down from (7, 6). Which point will Billy circle?

A Point *K*

B Point *L*

C Point *M*

D Point *N*

---

6 Edna completed $4\frac{2}{3}$ puzzles. Which improper fraction is equivalent to the number of puzzles Edna completed?

F $\frac{9}{3}$

G $\frac{14}{3}$

H $\frac{10}{3}$

J $\frac{24}{3}$

GO ON

7 The places Teresa can choose to go on Friday or Saturday are listed below. She can go to 1 place each day.

- Concert
- Movie
- Park
- Gym

Which list shows all the possible outcomes of 1 place and 1 day?

A Concert, Friday
Movie, Friday
Park, Saturday
Gym, Saturday

B Concert, Friday
Concert, Saturday
Concert, Movie
Movie, Saturday
Park, Friday
Park, Saturday
Gym, Park
Gym, Saturday

C Concert, Friday
Gym, Saturday

D Concert, Friday
Concert, Saturday
Movie, Friday
Movie, Saturday
Park, Friday
Park, Saturday
Gym, Friday
Gym, Saturday

---

8 A coffeemaker at a restaurant can brew 42 cups. How many pints can this coffeemaker brew?

F 84 pints

G 21 pints

H 336 pints

J 420 pints

GO ON

9 Five people each bought a box of straws. In Aaron's box $\frac{6}{20}$ of the straws were green. The table below shows the fraction of green straws in the other four boxes.

Straws

Name	Fraction of Green Straws
Lance	$\frac{3}{10}$
Cindy	$\frac{10}{40}$
Eric	$\frac{3}{30}$
Fred	$\frac{7}{10}$

Based on the table, which two people had boxes in which less than $\frac{6}{20}$ of the straws were green?

A Lance and Fred

B Lance and Cindy

C Eric and Fred

D Cindy and Eric

GO ON

10 Sakina spun the arrow on a spinner 80 times. The table below shows the number of times the arrow landed on each of the six colored sections.

Spinner Colors

Color	Number of Times
Red	12
Blue	18
Green	30
Yellow	10
Pink	4
Orange	6

Based on the information in the table, which statement about the next spin is **NOT** true?

F The arrow is less likely to land on a pink section than on a red section.

G The arrow is 3 times as likely to land on a green section as on a yellow section.

H The arrow is more likely to land on an orange section than on a blue section.

J The arrow is 2 times as likely to land on a red section as on an orange section.

---

11 Alberto ran a race in 17.6 seconds. Jake ran the race in 18.307 seconds. Which race time is greater than 17.6 seconds but less than 18.307 seconds?

A 17.054 s

B 18.4 s

C 17.39 s

D 18.21 s

GO ON

12 Gavin started hiking at 8:00 A.M. when the temperature was 64°F.

- The temperature rose 17°F by noon.
- The temperature then fell 25°F by the time Gavin finished hiking.

What was the temperature when Gavin finished hiking?

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

---

13 A gardener has 785 bricks to build a path in a garden. There will be 24 bricks in each row of the path. How many complete rows can the gardener make using 785 bricks?

A 32

B 17

C 33

D 65

GO ON

14 A mechanic repaired 28 cars and 46 trucks last month. He spent 2 hours repairing each of these vehicles. Which equation can be used to find h, the total number of hours the mechanic spent repairing these vehicles?

F $h = (28 + 46) \div 2$

G $h = (28 + 46) + 2$

H $h = (28 + 46) \times 2$

J $h = (28 + 46) - 2$

---

15 Brennon has a total of 187 postage stamps.

- He has 48 stamps that are each 14 millimeters wide.
- He has 139 stamps that are each 12 millimeters wide.

What is the total width of these stamps?

A 2,618 mm

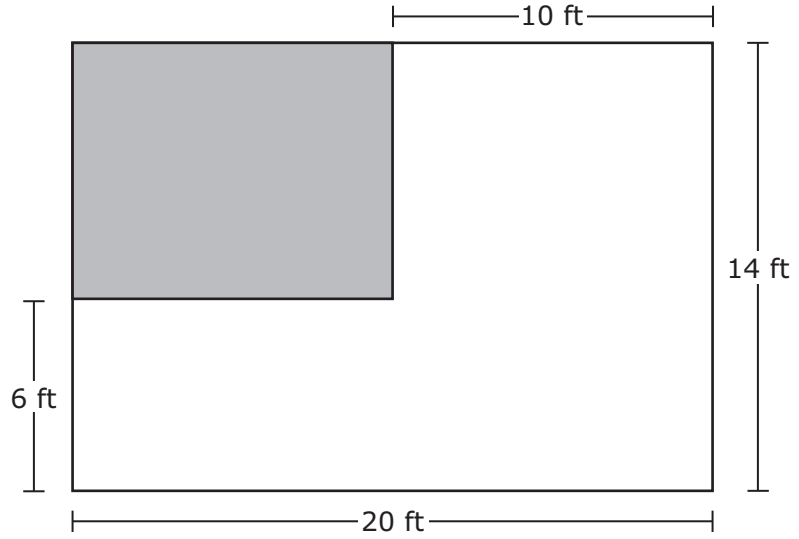
B 2,230 mm

C 2,340 mm

D 657 mm

GO ON

16 Harman is painting a rectangular wall. He has already painted the rectangular shaded section, as shown below.



What is the area of the shaded section Harman has already painted?

F 80 square feet

G 140 square feet

H 56 square feet

J 280 square feet

---

17 Kwan has a garden. If $\frac{7}{10}$ of the plants in his garden are daisies, which statement could be true?

A Out of a total of 7 plants, 1 plant is a daisy.

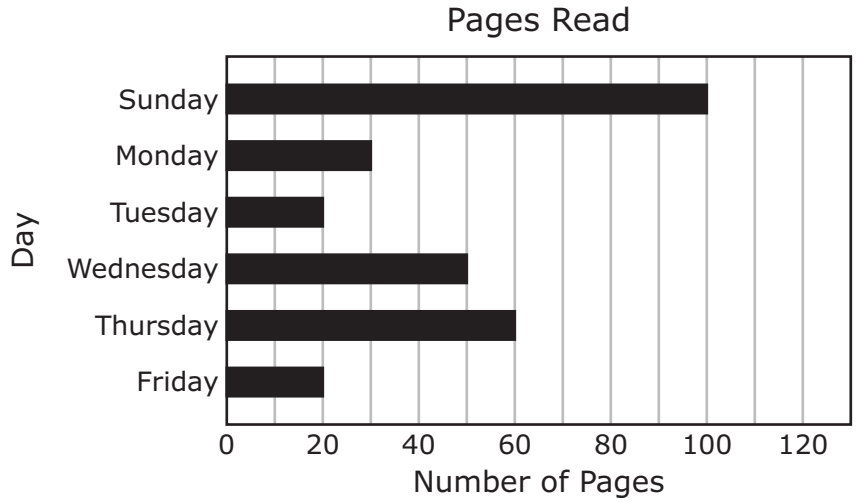
B Out of a total of 50 plants, 7 plants are daisies.

C Out of a total of 35 plants, 15 plants are daisies.

D Out of a total of 50 plants, 35 plants are daisies.

GO ON

18 The graph below shows the number of pages Joaquín read each day for six days last week.



What is the median number of pages in this set of data?

F 35

G 40

H 20

J 80

---

19 Vince has $\frac{8}{12}$ of a tank of gasoline left in his car. Which fraction is greater than $\frac{8}{12}$?

A $\frac{5}{6}$

B $\frac{2}{3}$

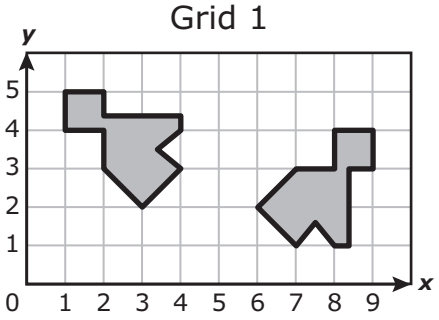
C $\frac{8}{16}$

D $\frac{9}{24}$

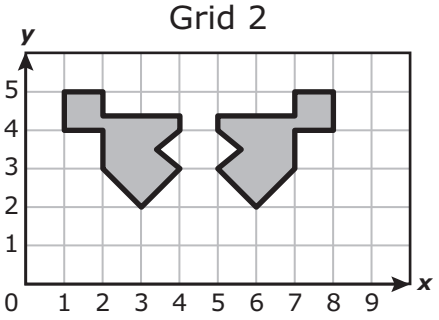
GO ON

20 Each coordinate grid below shows a single transformation.

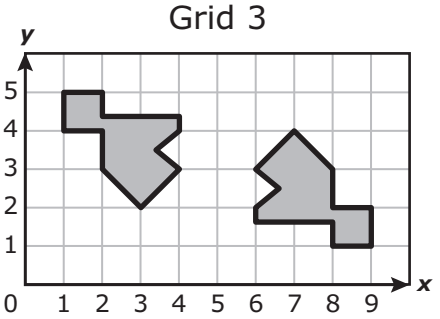
Grid 1



Grid 2



Grid 3



Which list describes the transformations in grids 1, 2, and 3 in order?

F Translation, reflection, rotation

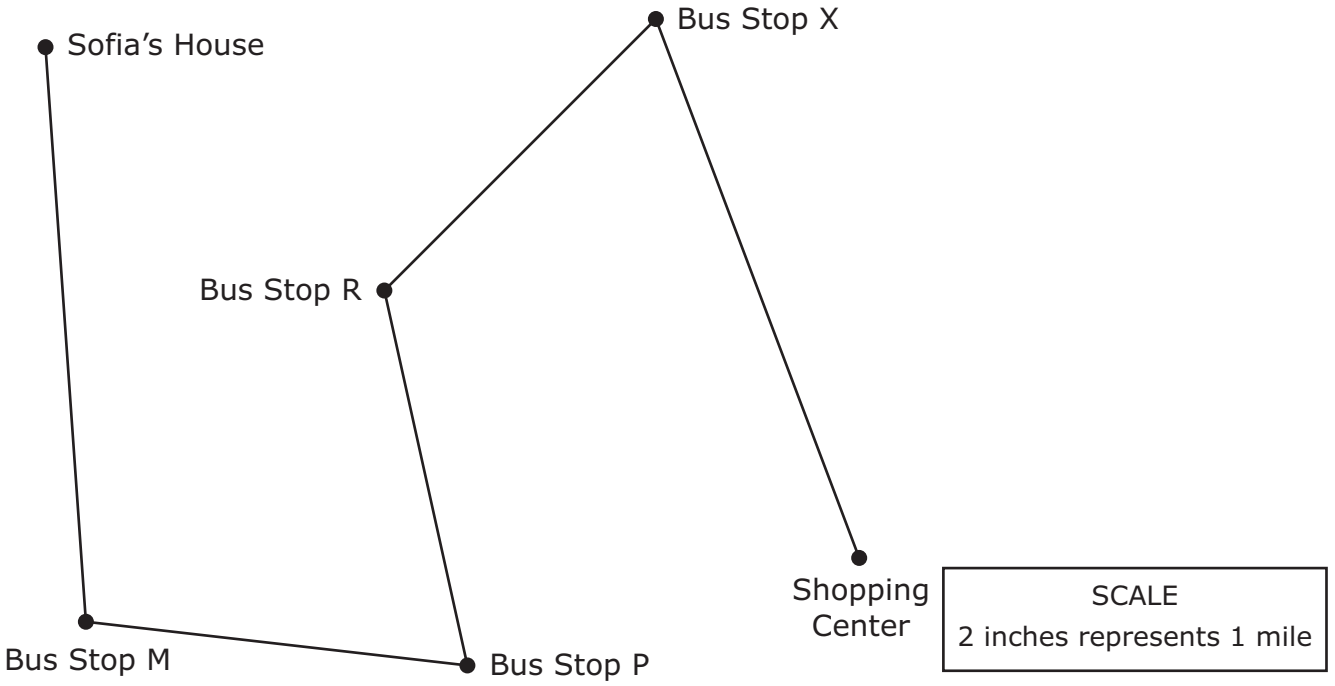
G Rotation, reflection, rotation

H Reflection, translation, rotation

J Rotation, reflection, reflection

GO ON

21 The diagram below models the bus route Sofia takes to get from her house to a shopping center. Use the ruler provided to measure Sofia's route to the nearest inch.



If 2 inches in the drawing represents 1 mile, which distance is closest to the length of the actual bus route Sofia takes to get from her house to the shopping center?

A 24 mi

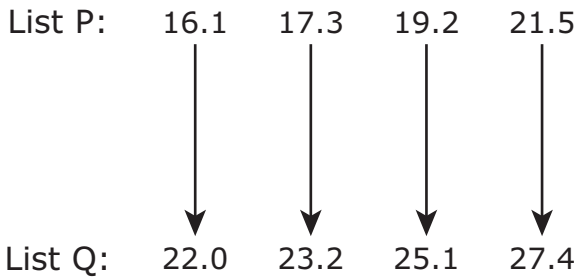
B 6 mi

C 5 mi

D 12 mi

GO ON

22 Two lists of numbers are shown below.



Which statement about these lists of numbers is true?

F Each number in List P is 6.1 less than the number below it in List Q.

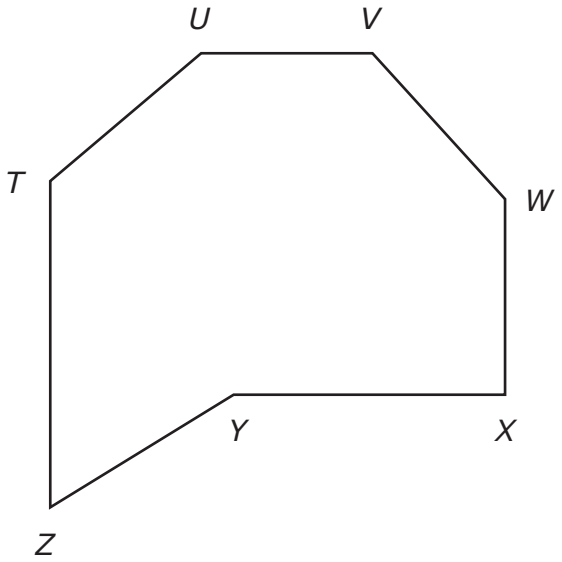
G Each number in List P is 5.9 more than the number below it in List Q.

H Each number in List P is 5.9 less than the number below it in List Q.

J Each number in List P is 6.1 more than the number below it in List Q.

---

23 Lakin drew the figure below.



Which line segments intersect each other but do not appear to be perpendicular?

A $\overline{UV}$ and $\overline{VW}$

B $\overline{WX}$ and $\overline{TZ}$

C $\overline{WX}$ and $\overline{XY}$

D $\overline{UV}$ and $\overline{XY}$

GO ON

24 There are four times as many cows as horses on a farm. There are twice as many horses as pigs on the farm. Which list shows the number of each type of animal on this farm?

F 9 cows, 36 horses, and 18 pigs

G 48 cows, 12 horses, and 24 pigs

H 32 cows, 16 horses, and 8 pigs

J 72 cows, 18 horses, and 9 pigs

---

25 The table below shows the grades Rene earned on some reading assignments.

Grades on Reading Assignments

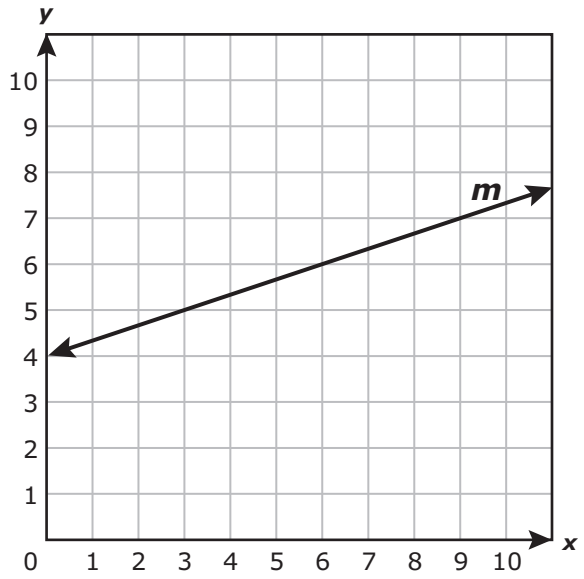
Assignment Number	1	2	3	4	5	6	7	8	9	10	11	12
Grade	78	92	85	80	92	100	79	88	92	100	95	89

What is the range of these grades?

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

GO ON

26 Line *m* is shown on the coordinate grid below.



Which ordered pair represents a point that is located below line *m*?

F (3, 5)

G (10, 6)

H (2, 8)

J (4, 10)

---

27 Alex used blue, red, and green pieces of plastic to make a design.

- He used 84 green pieces of plastic.
- He used 20 more green pieces of plastic than blue pieces of plastic.
- He used 15 more red pieces of plastic than blue pieces of plastic.

What is the number of red pieces of plastic Alex used?

A 79

B 89

C 49

D 119

GO ON

28 Oneesha swims a total of 13 kilometers each week. What is the total number of meters Oneesha swims in 3 weeks?

F 39 m

G 13,000 m

H 3,900 m

J 39,000 m

---

29 A machine gives out a random sticker each time a person puts in money. The table below shows the number of stickers of each type that were given out in 36 times.

Stickers

Type	Number Given Out
Robot	12
Superhero	8
Car	6
Airplane	4
Sports	6

Based on the information in the table, which statement about the next sticker to come out of the machine is true?

A It is 3 times as likely to be a robot sticker as an airplane sticker.

B It is certain to be a sports sticker.

C It is 2 times as likely to be a car sticker as an airplane sticker.

D It is certain to be a robot sticker.

GO ON

30 The numbers below all have something in common.

64
112
96
240
344

Which statement describes something these numbers have in common?

F They are all divisible by 12.

G They are all divisible by 16.

H They are all divisible by 8.

J They are all divisible by 6.

---

31 Nancy has a bag that contains the following shapes.

- 12 hexagons
- 7 pentagons
- 20 octagons
- 16 parallelograms
- 5 trapezoids

She will randomly select one shape from this bag. What is the probability that the shape Nancy selects will have 5 or more sides?

A $\frac{39}{60}$

B $\frac{1}{7}$

C $\frac{32}{60}$

D $\frac{1}{5}$

GO ON

32 A teacher wrote several nouns, verbs, adjectives, and adverbs on the board. The table below shows the fraction of each type of word written on the board.

Words

Type of Word	Fraction of Words on Board
Noun	$\frac{3}{7}$
Verb	$\frac{3}{14}$
Adjective	$\frac{1}{14}$
Adverb	$\frac{2}{7}$

Which correctly compares two of these fractions?

F $\frac{1}{14} > \frac{3}{7}$

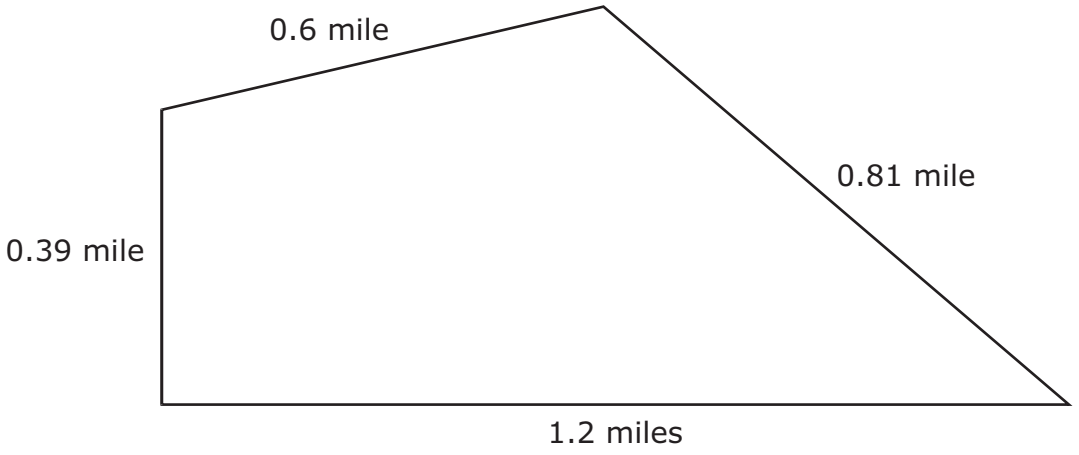
G $\frac{3}{7} > \frac{3}{14}$

H $\frac{3}{14} < \frac{1}{14}$

J $\frac{2}{7} < \frac{3}{14}$

GO ON

33 The side lengths of a field are shown below.



What is the perimeter of the field?

A 1.41 mi

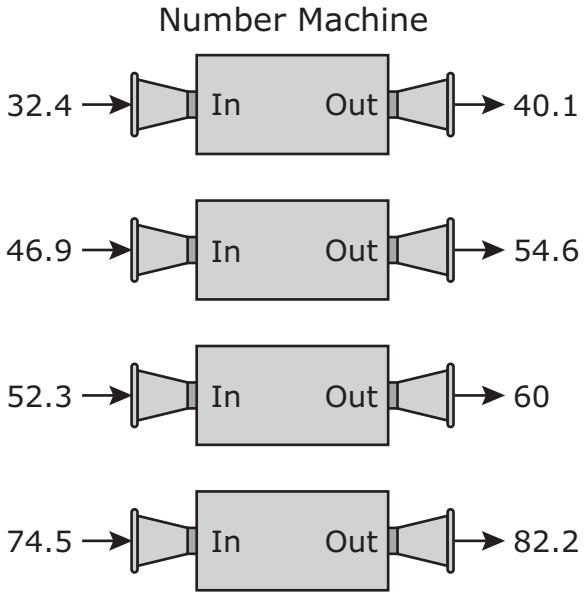
B 3.18 mi

C 3 mi

D 2 mi

GO ON

34 Rachelle used a number machine. When she put a number into the machine, a different number came out according to a rule. Some examples are shown below.



The number that came out of the machine is —

F 8.3 less than the number she put into the machine

G 7.7 less than the number she put into the machine

H 8.3 more than the number she put into the machine

J 7.7 more than the number she put into the machine

GO ON

35 Antonia colored 36 of the 60 pictures in her coloring book. Which fraction is **NOT** equivalent to the fraction of pictures Antonia colored?

A $\frac{6}{10}$

B $\frac{3}{5}$

C $\frac{8}{20}$

D $\frac{18}{30}$

---

36 The table below shows the number of votes for different school mascots.

Votes for Mascots

Mascot	Tiger	Eagle	Bobcat	Duck
Number of Votes	18	24	3	30

Based on the information in the table, what is the most reasonable prediction of the number of votes for eagle out of the next 25 votes?

F 72

G 8

H 1

J 21

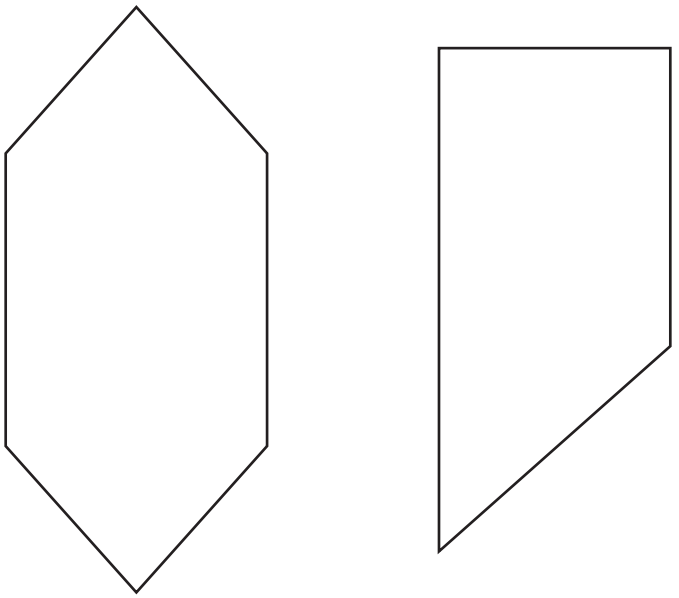
GO ON

37 Cathy is organizing the bottles of nail polish at a store. There are a total of 296 bottles. If Cathy puts the same number of bottles on each of 4 shelves, how many bottles will be on each shelf?

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

---

38 Two figures are shown below.



Which statement about these two figures appears to be true?

F There are a total of 5 acute angles.

G There are a total of 5 obtuse angles.

H There are a total of 2 acute angles.

J There are a total of 2 obtuse angles.

39 The sign below shows the starting time of a music concert.

Evander plans to leave his house 1 hour 40 minutes before the concert starts. At what time should Evander leave his house?

A 5:45 P.M.

B 6:45 P.M.

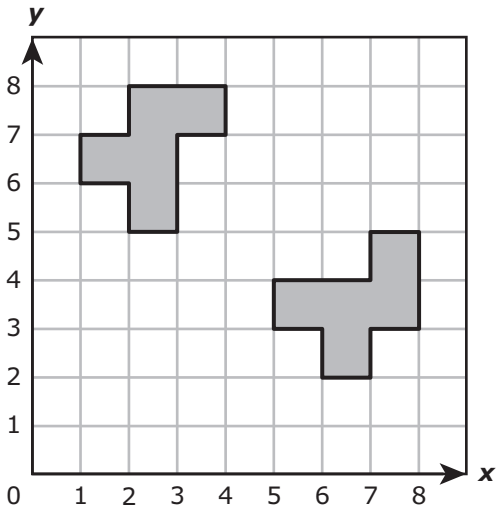
C 5:35 P.M.

D 9:05 P.M.

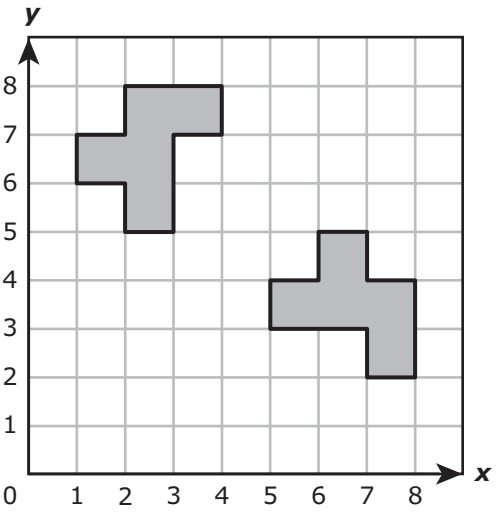
GO ON

40 Which coordinate grid shows only a rotation?

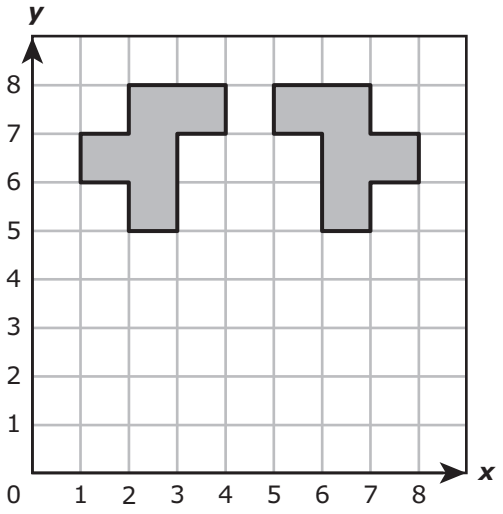
F



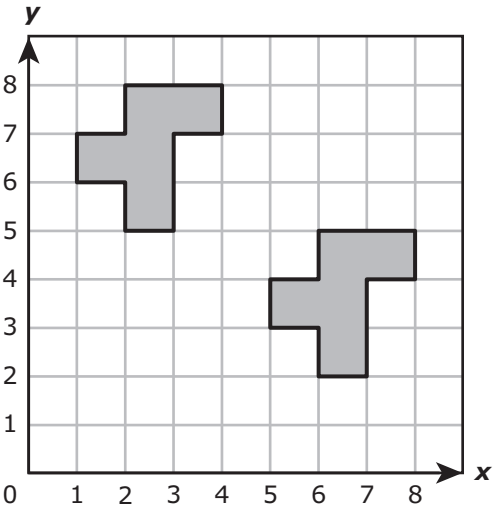
H



G

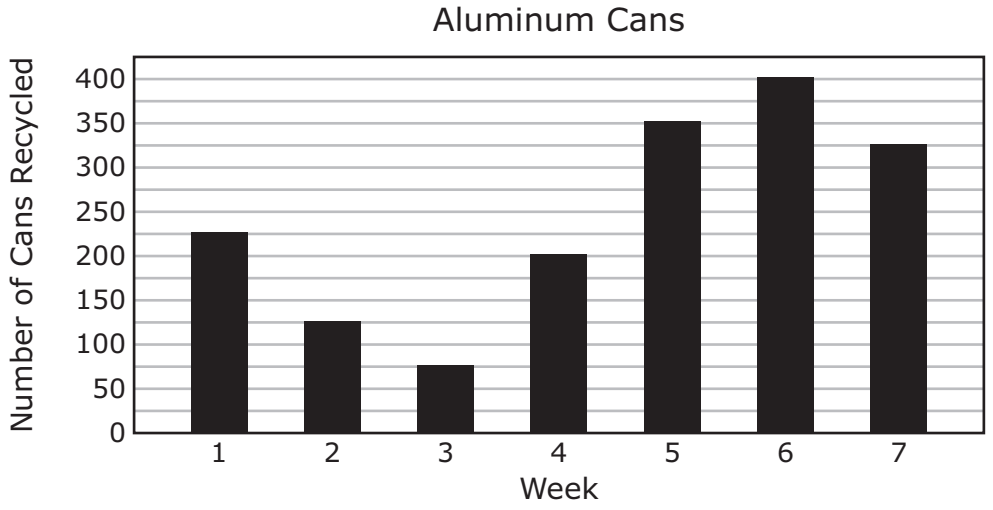


J



GO ON

41 Wade's class is recycling aluminum cans. The graph below shows the number of cans his class recycled each week for 7 weeks.



What is the range of the number of cans recycled?

A 100

B 325

C 225

D 200

---

42 Luke made the list of numbers below.

40	41	42	43	44	45	46	47	48	49

How many of the numbers in Luke's list are prime numbers?

F 3

G 7

H 10

J 5

GO ON

43 Lisa cut a rope that was 19.75 meters long into 3 pieces. The first piece of rope was 6.4 meters long, and the second piece of rope was 4.36 meters long. How long was the third piece of rope?

A 10.76 m

B 8.99 m

C 30.51 m

D 9.35 m

---

44 The table below shows the number of customers at a coffee shop each hour for nine hours.

Coffee Shop Customers

Hour	1	2	3	4	5	6	7	8	9
Number of Customers	15	28	42	58	36	62	28	45	50

Which statement about the data for the number of customers is true?

F The mode is 35.

G The mode is 47.

H The mode is 28.

J The mode is 42.

---

45 Anna pays $618 for six months of music lessons. She pays the same amount for lessons each month. Which of the following is the best estimate of the amount Anna pays each month?

A $100

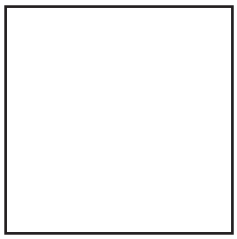
B $150

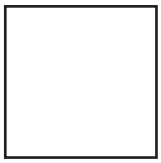
C $125

D $200

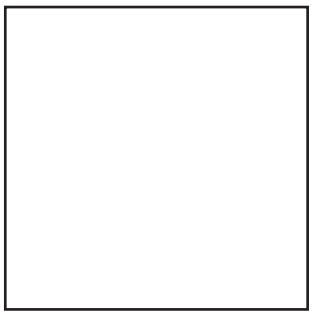
GO ON

46 Wesley has a cube with a volume of 8 cubic centimeters. Use the ruler provided to measure the dimensions of each square below to the nearest centimeter. Which square is congruent to a face of Wesley's cube?

F 

H 

G 

J 

---

47 On Monday 149 people each bought 1 CD at a music store. On Tuesday 263 people each bought 1 CD. All the CDs cost $9. What was the total amount paid for the CDs on these two days?

A $3,608

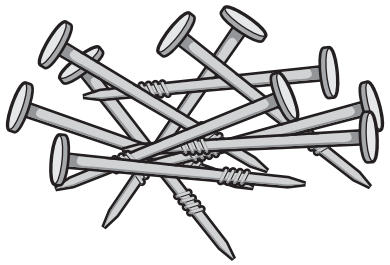
B $1,341

C $2,367

D $3,708

GO ON

48 The table below shows the total number of nails in different numbers of boxes.



Boxes of Nails

Total Number of Nails	480	960	1,440	1,920
Number of Boxes	3	6	9	12

Which statement describes the relationship between the total number of nails and the number of boxes?

F The total number of nails is the number of boxes plus 480.

G The total number of nails is the number of boxes times 2.

H The total number of nails is the number of boxes times 160.

J The total number of nails is the number of boxes plus 3.

---

49 Scott completed $\frac{4}{6}$ of a project on Saturday. Which fraction is equivalent to $\frac{4}{6}$?

A $\frac{16}{24}$

B $\frac{8}{18}$

C $\frac{16}{18}$

D $\frac{20}{24}$

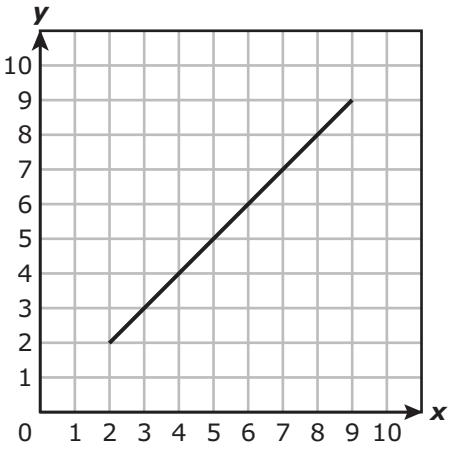
GO ON

50 Isaiah recorded the coordinates of four points in the table below.

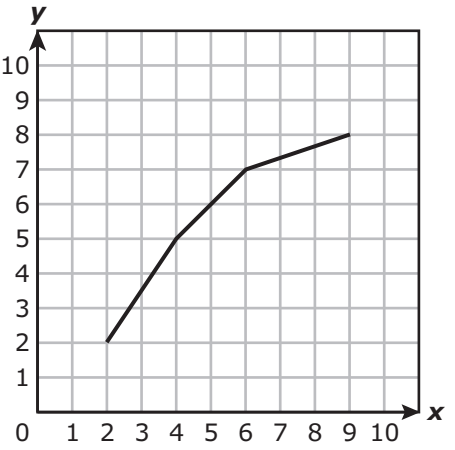
x	*y*
2	2
4	5
6	7
9	8

Which line graph represents the data in the table?

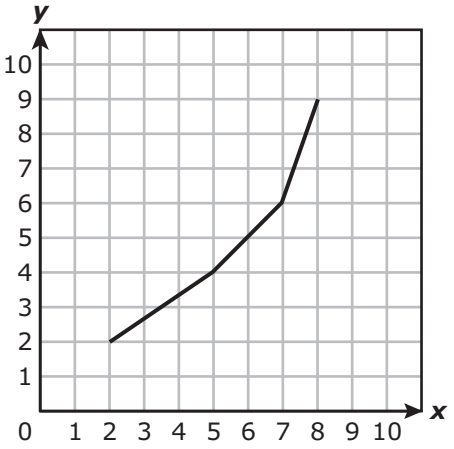
F



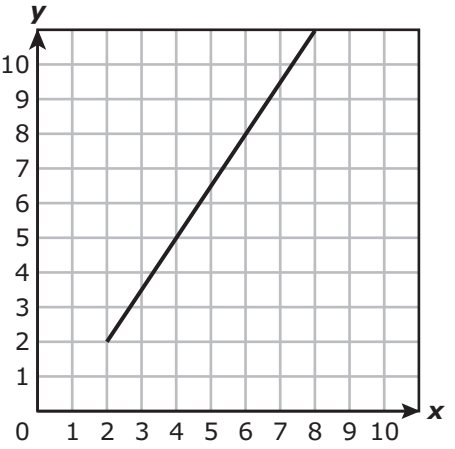
H



G



J



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

STAAR
GRADE 5
Mathematics
April 2013

545588 1 2 3 4 5 A B C D E Printed in the USA ISD4717