# Mathletes Challenge 2014
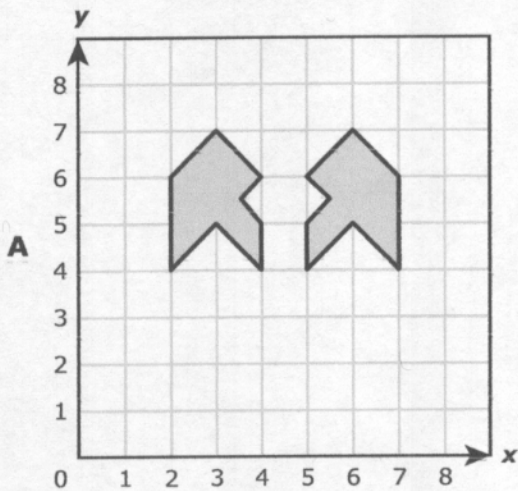
Round 1

Test 1

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.

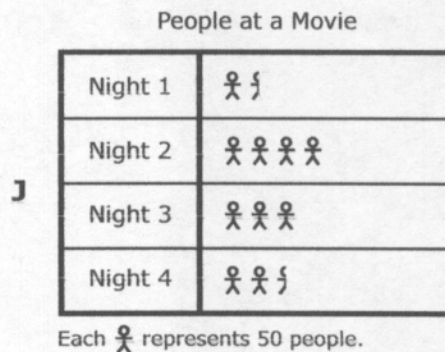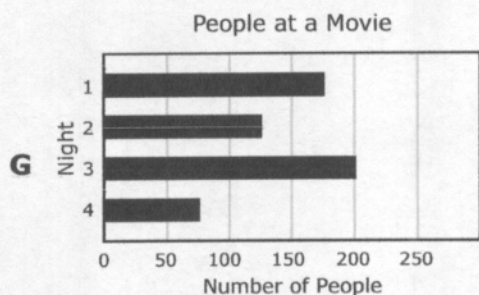**1** Which coordinate grid shows only a translation?

A

C

B

D

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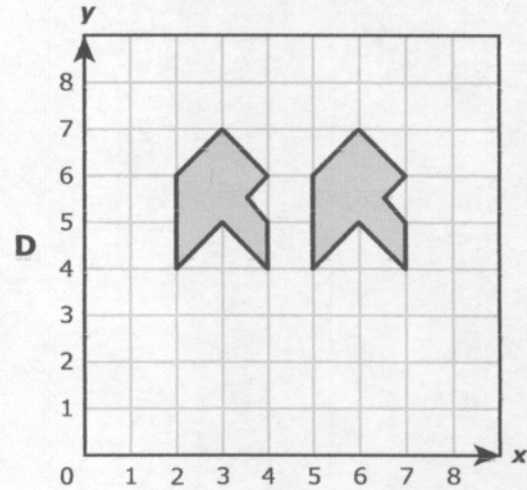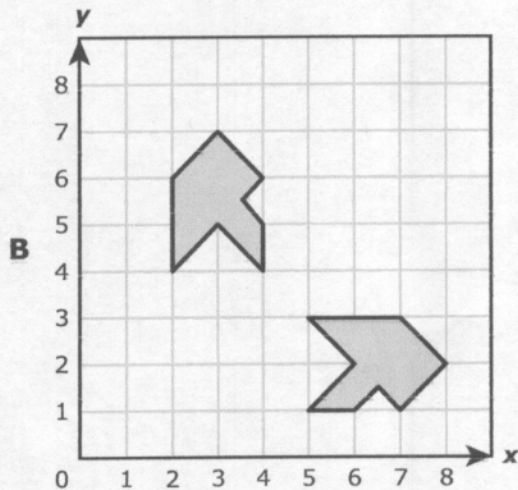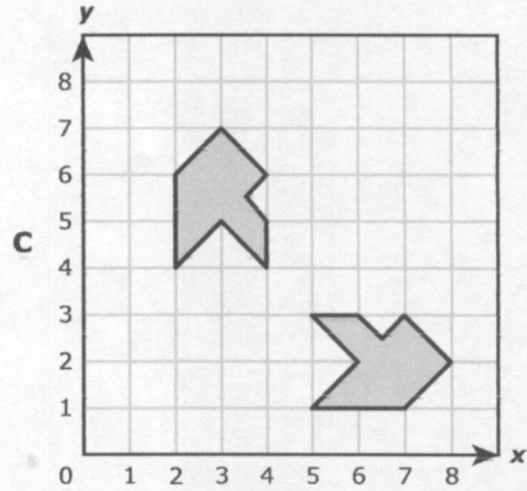
2 The table below shows the number of people who went to a movie each night on four nights.

People at a Movie

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

Which graph represents the data in the table?

People at a Movie

F

People at a Movie

H

Night 1	♀♀♀
Night 2	♀♀♀♀
Night 3	♀♀♀♀♀
Night 4	♀♀♀♀♀♀♀

Each ♀ represents 25 people.

People at a Movie

G

People at a Movie

J

Night 1	♀ ♪
Night 2	♀♀♀♀
Night 3	♀♀♀
Night 4	♀♀ ♪

Each ♀ represents 50 people.
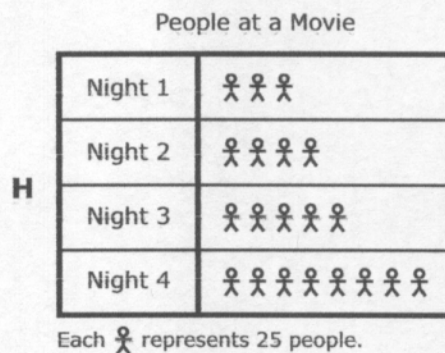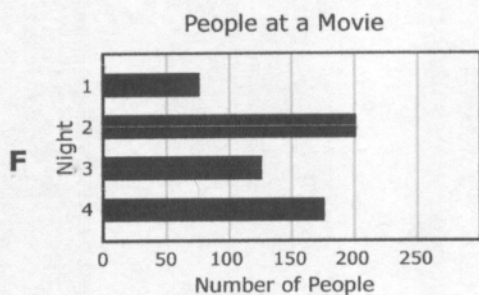
3 The table below shows the total number of juice bottles in different numbers of boxes.

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.

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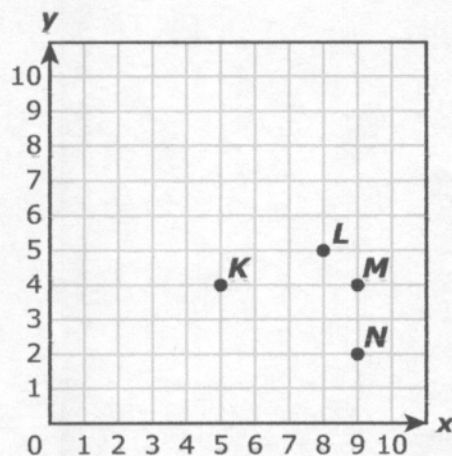
Billy will then circle the point that is 2 units right and 2 units down from (7, 6). Which point will Billy circle?

A Point *K*

B Point *L*

C Point *M*

D Point *N*

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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

C Concert, Friday
Gym, Saturday

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

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

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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.

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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

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.

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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

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 $h = (28 + 46) - 2$

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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.
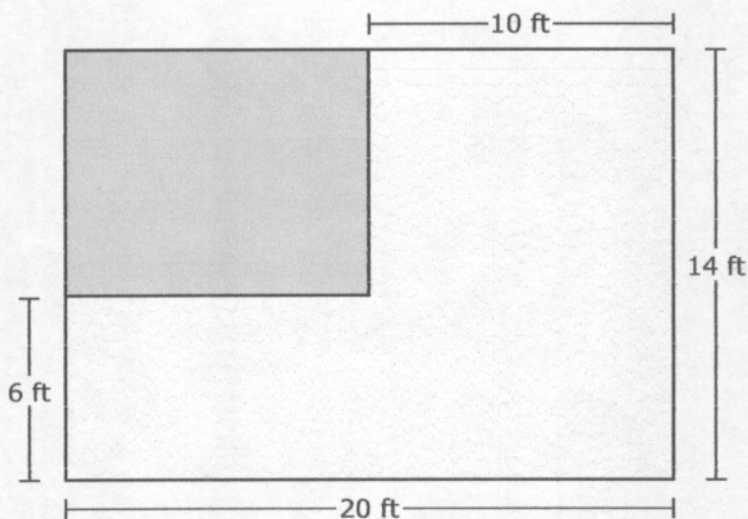
What is the total width of these stamps?

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

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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

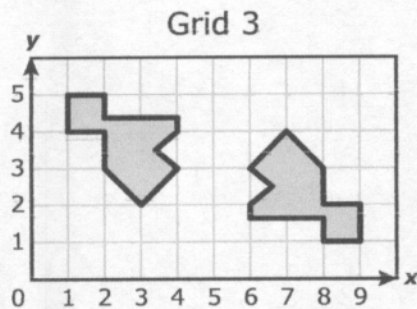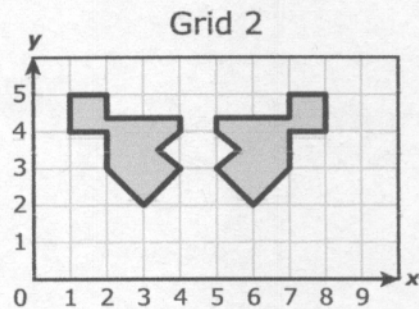**18** The graph below shows the number of pages Joaquín read each day for six days last week.
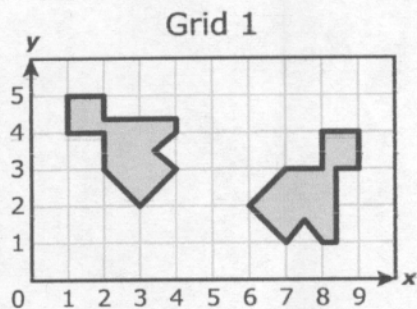
Pages Read
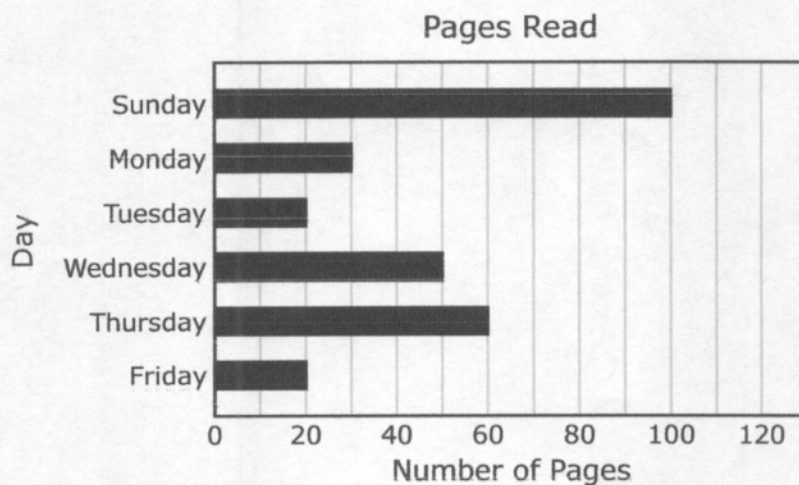
What is the median number of pages in this set of data?

F 35

G 40

H 20

J 80

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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

Mathletes Round 1 - Test 1

KEY (████████)

1. Ⓐ Ⓑ Ⓒ ●
2. ● Ⓖ Ⓗ Ⓙ
3. Ⓐ ● Ⓒ Ⓓ
4. ● Ⓖ Ⓗ Ⓙ
5. Ⓐ Ⓑ ● Ⓓ
6. Ⓕ ● Ⓗ Ⓙ
7. Ⓐ Ⓑ Ⓒ ●
8. Ⓕ ● Ⓗ Ⓙ
9. Ⓐ Ⓑ Ⓒ ●
10. Ⓕ Ⓖ ● Ⓙ
11. Ⓐ Ⓑ Ⓒ ●
12. ● Ⓖ Ⓗ Ⓙ   56°F
13. ● Ⓑ Ⓒ Ⓓ
14. Ⓕ Ⓖ ● Ⓙ
15. Ⓐ Ⓑ ● Ⓓ
16. ● Ⓖ Ⓗ Ⓙ
17. Ⓐ Ⓑ Ⓒ ●
18. Ⓕ ● Ⓗ Ⓙ
19. ● Ⓑ Ⓒ Ⓓ
20. Ⓕ ● Ⓗ Ⓙ