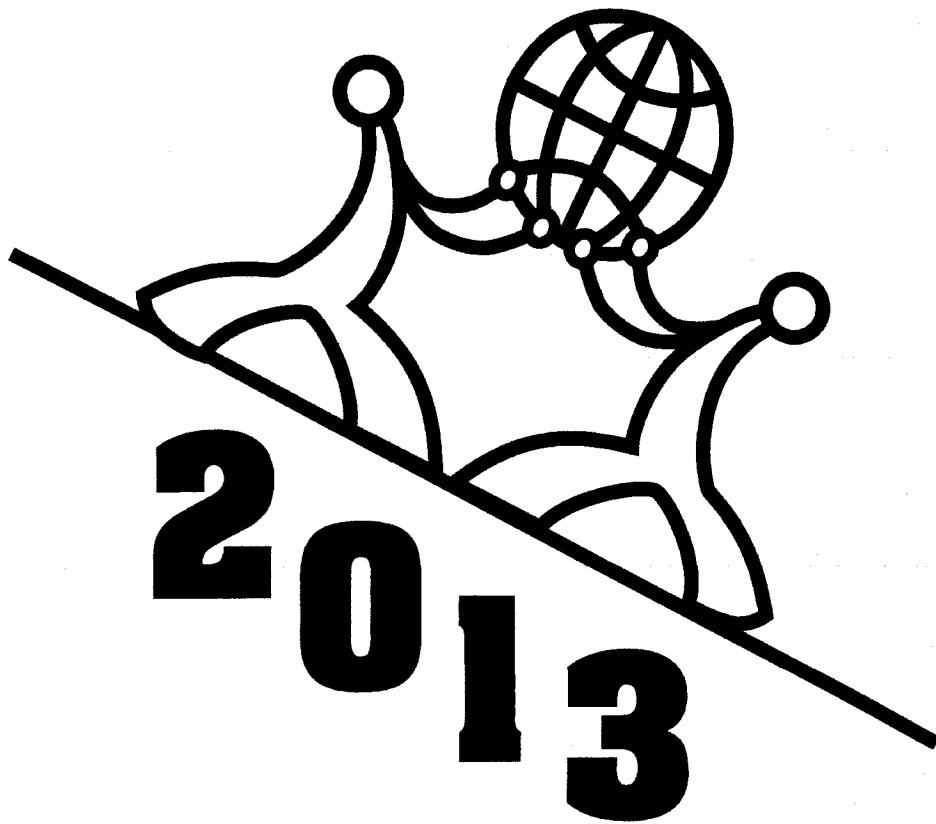


School/Team Name _____

MATHLETES +

CHALLENGE



Championship (2nd half)

The table shows the elevations (heights above sea level) and average high temperatures for five cities in California during the month of February.

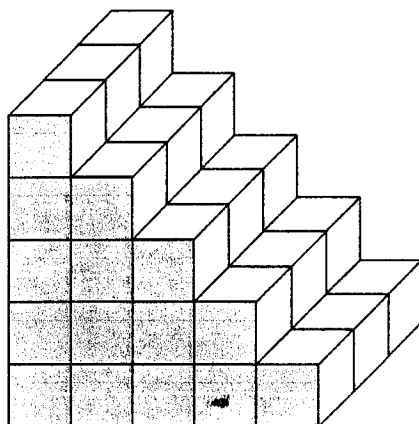
California Cities	Height Above Sea Level	Average High Temperature for February
California City	2,300 ft	62°F
Death Valley	-282 ft	73°F
Independence	4,121 ft	60°F
Los Angeles	256 ft	70°F
San Bernardino	1,350 ft	69°F

What conclusion about the average high temperature can be drawn from these data?

- A. The elevation of the city is unrelated to the temperature.
 - B. The lower the elevation of the city, the lower the temperature.
 - C. The greater the elevation of the city, the lower the temperature.
 - D. The greater the elevation of the city, the greater the temperature.
2. Joann's garden plot is 5 feet by 6 feet. Joann decides to double the length and the width of the garden.
- How does the perimeter of her garden change?
- A. The perimeter is one and a half times larger than the perimeter of the original garden.
 - B. The perimeter is two times larger than the perimeter of the original garden.
 - C. The perimeter is three times larger than the perimeter of the original garden.
 - D. The perimeter is four times larger than the perimeter of the original garden.

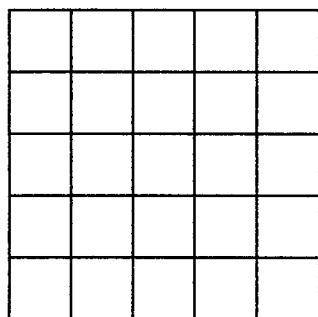
3

A staircase at Summerville Mall is designed as shown.

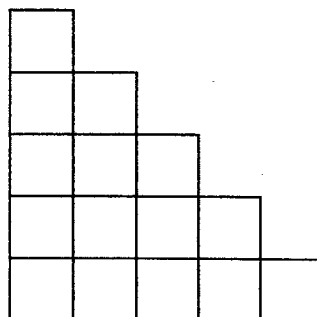


Which figure shows what the staircase would look like when viewed from above?

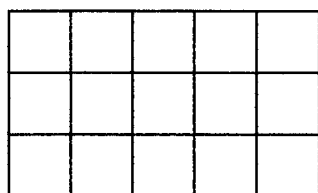
A.



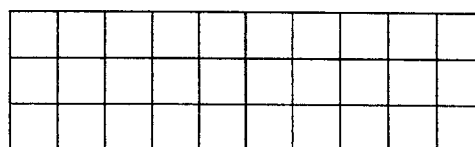
B.



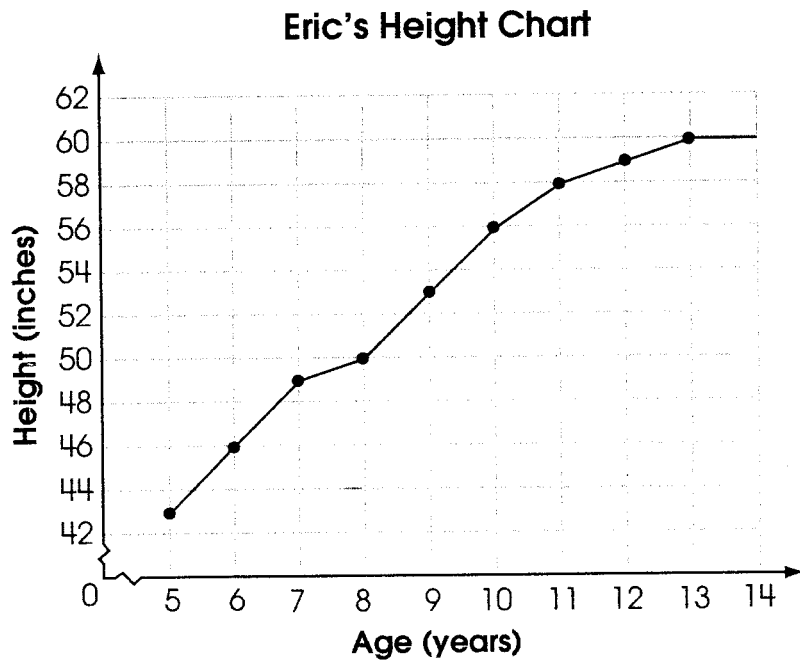
C.



D.



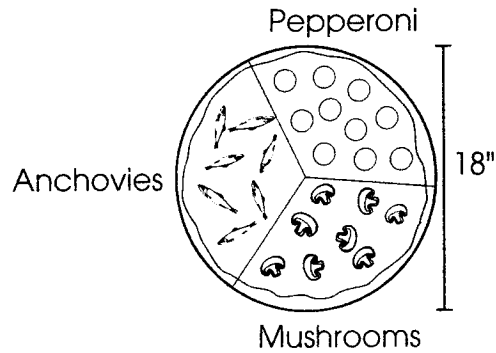
4. The line graph shows Eric's height from age 5 to age 13.



How many inches did Eric grow from age 7 to age 10?

- A. 3
- B. 7
- C. 49
- D. 56

5. Three friends ordered the pizza shown.

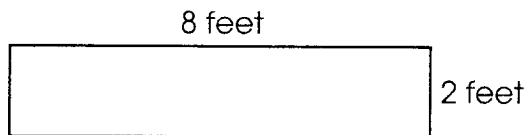


The pizza has a total area of 254.34 square inches and is divided into equal sections.

What is the area of the portion covered with mushrooms?

- A. 84.78 square inches
- B. 127.17 square inches
- C. 508.68 square inches
- D. 763.02 square inches

- 6 Winn planned to build a rectangular dog pen with the dimensions shown.



He bought all the fencing but decided the pen was too small for his dog.

What could be the dimensions of a new rectangular pen that has more space but uses the same amount of fencing?

- A. 1 feet \times 9 feet
- B. 4 feet \times 4 feet
- C. 6 feet \times 4 feet
- D. 10 feet \times 10 feet

7. Ina is playing a game with a cube that is labeled "win" on four sides and "lose" on two sides. She expects to "win" $\frac{2}{3}$ of the time.

She rolls the cube six times and records the results as shown.

1	2	3	4	5	6
win	lose	lose	lose	win	win

Which statement best explains why the results of her experiment did not match her expectations?

- A. She should have had another person roll the cube half the time.
- B. She really should not win $\frac{2}{3}$ of the time.
- C. She did not roll the cube enough times.
- D. She rolled the cube too many times.

8. What is the value of x when $3x + 11 = 20$?

A. 3

B. $\frac{20}{3}$

C. 9

D. $\frac{31}{3}$

9. The lengths of the sides of a triangle are 3 inches, 4 inches and 5 inches.

Which are the side lengths of a similar triangle?

A. 6 inches, 7 inches, 8 inches

B. 6 inches, 8 inches, 10 inches

C. 9 inches, 12 inches, 20 inches

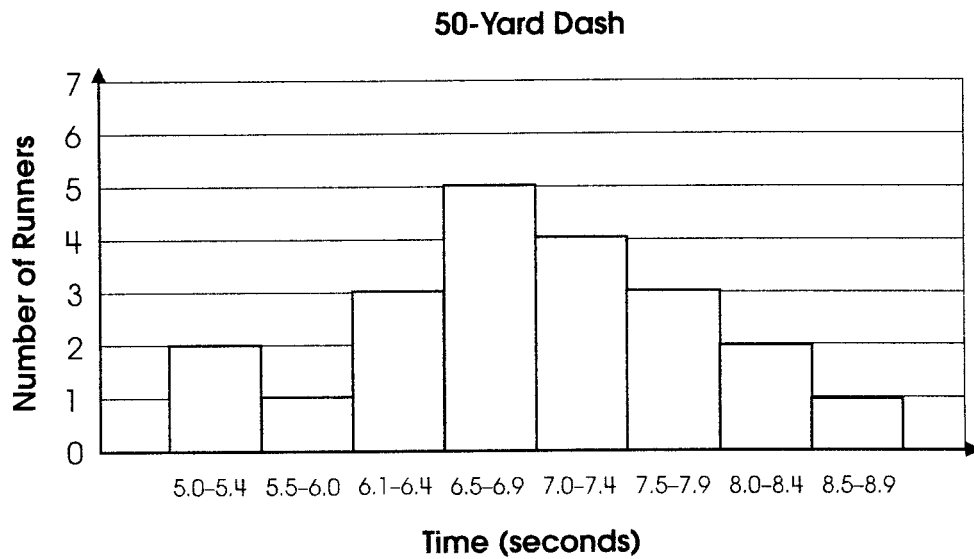
D. 9 inches, 16 inches, 25 inches

- 10 A pancake recipe uses 4 eggs to make 14 pancakes. Jeremy has 10 eggs.

What is the greatest number of pancakes that Jeremy can make?

- A. 14
- B. 18
- C. 35
- D. 56

11. The graph shows times for runners in the 50-yard dash.

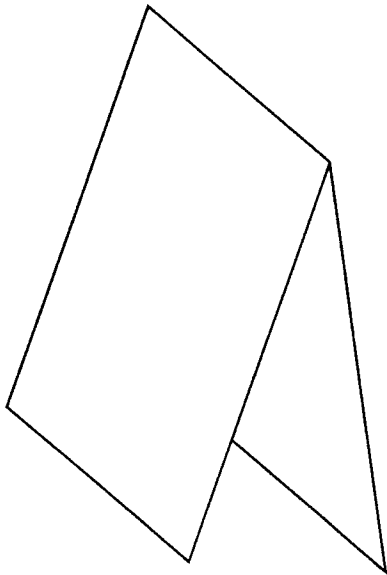


How many runners ran the distance in less than 7.0 seconds?

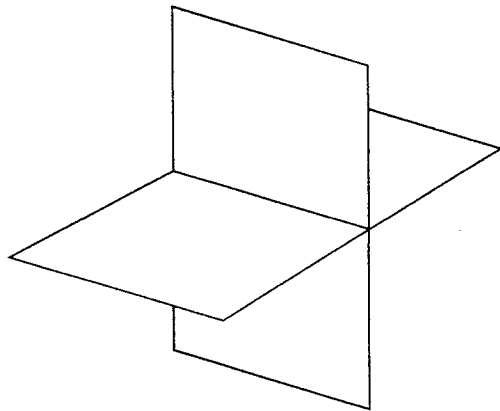
- A. 4 runners
- B. 5 runners
- C. 11 runners
- D. 21 runners

12 Which figure represents a perpendicular intersection of two planes?

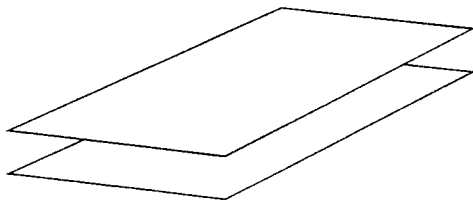
A.



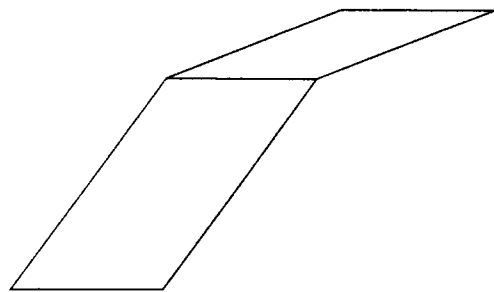
B.



C.

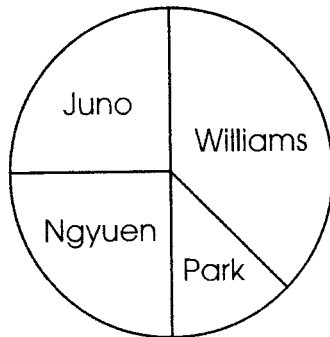


D.



- 13 Eighty students voted in the election for the sixth-grade class president. The results are shown in the graph.

Election Results



About how many votes did Park receive?

- A. 4
- B. 10
- C. 20
- D. 40

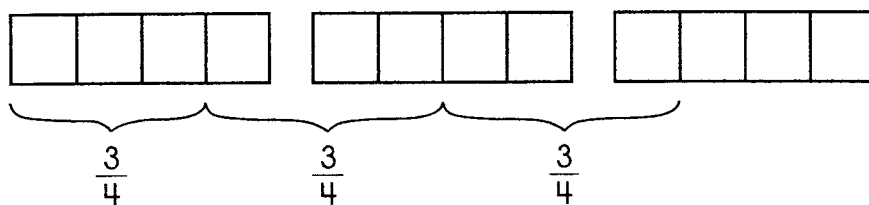
- 14 A DVD collection contains 8 dramas, 12 comedies and 6 action movies.

What is the ratio of dramas to action movies?

- A. 2:3
- B. 3:4
- C. 4:3
- D. 3:2

15

The model represents the quotient of two fractions.



Which expression does this model represent?

A. $\frac{3}{4} \div 2\frac{1}{4}$

B. $2\frac{1}{4} \div \frac{1}{4}$

C. $2\frac{1}{4} \div \frac{4}{3}$

D. $2\frac{1}{4} \div \frac{3}{4}$

16

At the school carnival, Annika's class earned \$120 in 1 hour and 30 minutes.

At this rate, how much will they earn during the 6 hours the carnival is open?

A. \$ 480

B. \$ 720

C. \$ 840

D. \$1,470

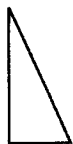
17. The frequency table shows the number of cousins for 29 students.

Number of Cousins	Number of Students
1	
2	
3	
4	
5	
6	

Which statement is true about these data?

- A. There is no mode.
- B. There is one mode.
- C. There are two modes.
- D. There are six modes.

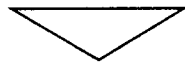
18. Three triangles are shown.



Triangle X



Triangle Y



Triangle Z

Which is the best description of triangles X, Y and Z?

- A. Triangle X is right scalene, triangle Y is acute equilateral, and triangle Z is obtuse isosceles.
 - B. Triangle X is obtuse scalene, triangle Y is right equilateral, and triangle Z is acute isosceles.
 - C. Triangle X is right isosceles, triangle Y is acute scalene, and triangle Z is obtuse equilateral.
 - D. Triangle X is acute equilateral, triangle Y is obtuse isosceles, and triangle Z is right scalene.
19. Andrew buys books and videos in a store. He uses the expression $6b + 12v$ to find the cost of what he is buying, where b is the number of books and v is the number of videos he buys.

Use the expression to find the total cost of 4 books and 5 videos.

- A. \$27
- B. \$54
- C. \$78
- D. \$84

20. Which table shows a constant rate of decrease?

A.

Input	Output
54	36
55	23
56	15
57	7

B.

Input	Output
54	36
55	18
56	9
57	3

C.

Input	Output
54	23
55	21
56	19
57	17

D.

Input	Output
54	23
55	22
56	9
57	3

Mathletes Challenge Championship
(2nd Half)

Name: KEY

1. ☐ ☐ ☒ ☐

2. ☐ ☒ ☐ ☐

3. ☐ ☐ ☒ ☐

4. ☐ ☒ ☐ ☐

5. ☒ ☐ ☐ ☐

6. ☐ ☐ ☒ ☐

7. ☐ ☐ ☒ ☐

8. ☒ ☐ ☐ ☐

9. ☐ ☒ ☐ ☐

10. ☐ ☐ ☒ ☐

11. ☐ ☐ ☒ ☐

12. ☐ ☒ ☐ ☐

13. ☐ ☒ ☐ ☐

14. ☐ ☐ ☒ ☐

15. ☐ ☐ ☐ ☒

16. ☒ ☐ ☐ ☐

17. ☐ ☐ ☒ ☐

18. ☒ ☐ ☐ ☐

19. ☐ ☐ ☐ ☒

20. ☐ ☐ ☒ ☐