1. The square shown below is divided into smaller squares.

What fraction of the largest square is shaded?

(A) $\frac{4}{9}$
(B) $\frac{4}{5}$
(C) $\frac{1}{2}$
(D) $\frac{2}{5}$

2. Which explanation best fits the following equation: $9 \div 3 = 3$?

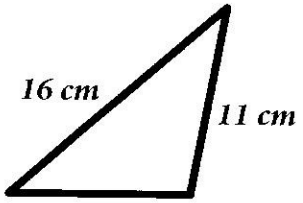
(A) I have 9 candies. If I give away 3 candies, how many do I have left?
(B) I want to share 9 candies evenly with 3 friends. How many candies does each friend get?
(C) I have 9 boxes of candy and each box has 3 candies in it. How many candies do I have all together?
(D) I have 9 candies and my friend has 3 candies. How many candies do we have all together?

3. Carol hit more than 5 but less than 9 home runs. When John asked her how many home runs she hit, she told him that she had hit more than 7 but less than 11 home runs. How many home runs did Carol hit?

(A) 6
(B) 7
(C) 8
(D) 9

CONTINUE TO THE NEXT PAGE

4. The triangle below has a perimeter of 35. Two of the side lengths are shown.



What is the length of the third side?

(A) 7 cm
(B) 8 cm
(C) 43 cm
(D) 46 cm

5. To answer the following question, use the equations below.

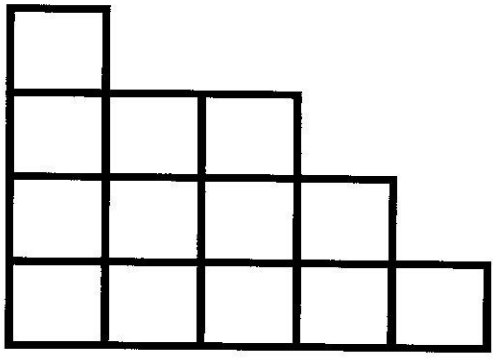
$4 + s = 7$
$5 + t = 7$

What is $s + t$ equal to?

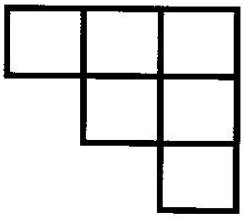
(A) 1
(B) 3
(C) 4
(D) 5

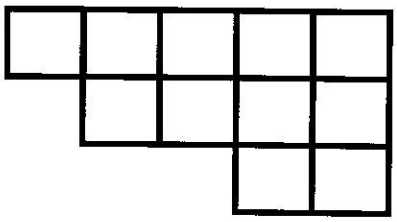
CONTINUE TO THE NEXT PAGE

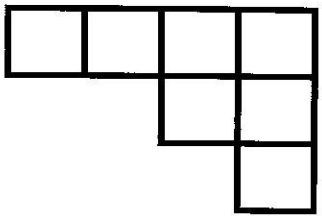
6. Refer to the figure below.

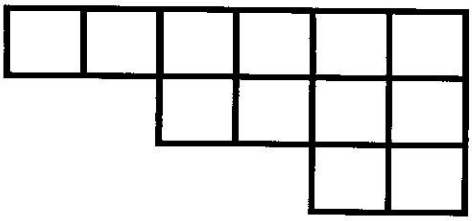


Which of the following would complete the picture above to make a rectangle?

(A) 

(B) 

(C) 

(D) 

CONTINUE TO THE NEXT PAGE

7. Liam and Harry were skiing at the same speed. It took Liam 24 minutes to ski 3 miles. How long did it take Harry to ski 9 miles?

(A) 60 minutes
(B) 72 minutes
(C) 90 minutes
(D) 96 minutes

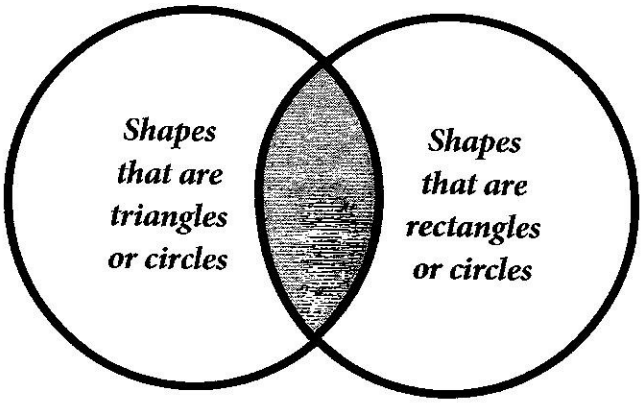
8. Which fraction is greatest?

(A) $\frac{6}{11}$
(B) $\frac{7}{15}$
(C) $\frac{8}{17}$
(D) $\frac{9}{19}$

9. If w can be divided by both 2 and 3 with no remainder, then w can also be divided by which of the following and leave no remainder?

(A) 4
(B) 5
(C) 6
(D) 10

10. Using the Venn diagram below, which shape could be found in the shaded region of the diagram?



(A) a red triangle
(B) a green triangle
(C) a blue rectangle
(D) a yellow circle

CONTINUE TO THE NEXT PAGE

11. What is the value of m in the equation $12 = 2m + 4$?

(A) 1
(B) 2
(C) 4
(D) 6

12. A class grew three different kinds of plants: grass, clover, and dandelions. They placed the plants in a sunny spot and measured their height each day. The table below shows the data that they collected.

HEIGHT OF PLANTS (in cm)			
	Grass	**Clover**	**Dandelion**
Day 1	1	1	0
Day 2	4	1	0
Day 3	6	2	1
Day 4	10	2	3
Day 5	13	3	6
Day 6	15	4	9

If the data continued to follow the same pattern, what would be the predicted height of the grass on Day 8?

(A) 15 cm
(B) 16 cm
(C) 20 cm
(D) 39 cm

CONTINUE TO THE NEXT PAGE

13. Use the table below to answer the question.

Input ■	Output Δ
3	8
5	12
7	16
9	20

What rule does this function follow?

(A) (■ × 2) + 2 = Δ
(B) (■ × 3) − 1 = Δ
(C) ■ + 5 = Δ
(D) ■ + 7 = Δ

14. A triangle has three sides that are all the same length. If the perimeter of the triangle is $9k$, then what is the length of one side?

(A) 3
(B) 6
(C) $3k$
(D) $9k$

15. Use the equations to find the sum.

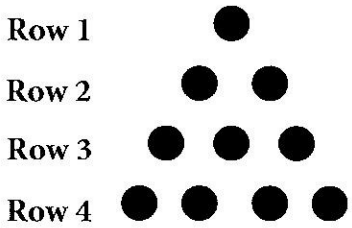
$4d + 5 = 17$
$3q = 15$

What is the sum of $d + q$?

(A) 3
(B) 5
(C) 7
(D) 8

CONTINUE TO THE NEXT PAGE

16. Use the pattern below to answer the question.



The first four rows of a pattern are shown above. If this pattern is continued, how many dots would the sixth row have?

(A) 5
(B) 6
(C) 9
(D) 12

17. Which fraction is the least?

(A) $\frac{3}{7}$
(B) $\frac{5}{9}$
(C) $\frac{7}{12}$
(D) $\frac{8}{15}$

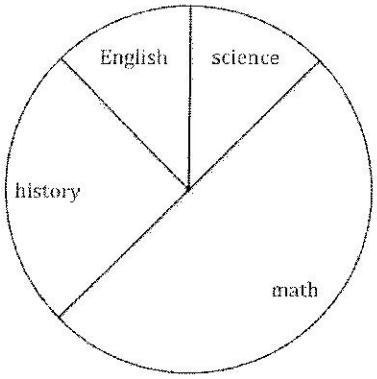
18. Use the pattern below to answer the question.

Julie creates a necklace using just black and white beads using the pattern shown above. The first bead is white, the second bead is black, the third and fourth beads are white, and so on. What number bead will the next black bead be?

(A) 1st
(B) 3rd
(C) 18th
(D) 21st

CONTINUE TO THE NEXT PAGE

19. A survey asked 80 students what their favorite class was. The results are shown in the circle graph below.



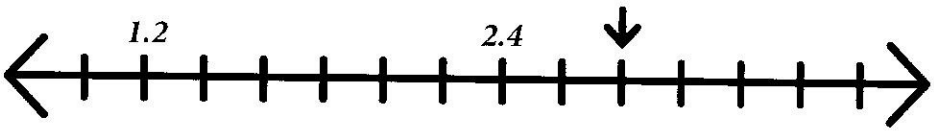
Approximately what fraction of the students said that science was their favorite class?

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) $\frac{1}{4}$
(D) $\frac{1}{8}$

20. Sarah measured four lizards. She found that two lizards were each $3\frac{1}{2}$ inches long, another lizard was 4 inches long, and the final lizard was 5 inches long. What was the mean length of the lizards that Sarah measured?

(A) 3 inches
(B) $3\frac{1}{2}$ inches
(C) 4 inches
(D) 5 inches

21. To answer the question, use the following number line:

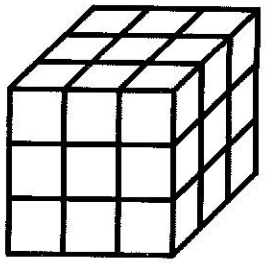


What number is the vertical arrow pointing to?

(A) 2.6
(B) 2.8
(C) 3.0
(D) 3.2

CONTINUE TO THE NEXT PAGE

22. Use the figure below to answer the question.



The larger cube above is made up of smaller cubes that are all the same size and shape. If the volume of each smaller cube is 1 unit^3, what is the volume of the larger cube?

(A) 54 units^3
(B) 27 units^3
(C) 9 units^3
(D) 3 units^3

23. Use the picture below to answer the question.

The length of LM is b and the length of MN is c. What is the length of LN?

(A) bc
(B) $b - c$
(C) $c - b$
(D) $b + c$

24. A store has 472 boxes of pencils. There are 12 pencils in each box. The store manager wants to know about how many total pencils the store has. Which expression would give her the best estimate of the total number of pencils?

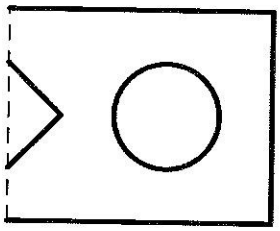
(A) 440×10
(B) 40×100
(C) 500×10
(D) 400×20

CONTINUE TO THE NEXT PAGE

25. Two glasses each hold 1 cup of liquid. One glass is $2/3$ full and the other glass is $3/4$ full. If both glasses were poured into an empty pitcher, about how much liquid would be in that pitcher?

(A) $5/6$ cup
(B) 1 cup
(C) 1.5 cups
(D) 2 cups

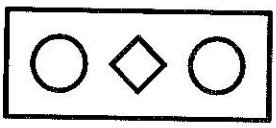
26. Use the figure below to answer the question.



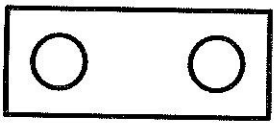
A piece of paper was folded along the dotted line as shown. A triangle and circle were then cut from the folded piece of paper, as shown. What will the piece of paper look like when it is unfolded?

(A)

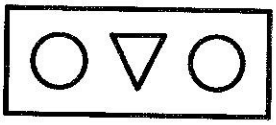
(B)



(C)



(D)



CONTINUE TO THE NEXT PAGE

27. To make a juice cocktail, the following juices were added into a pitcher:

    3 cups apple juice
    4 cups orange juice
    5 cups grapefruit juice
    2 cups cranberry juice
    2 cups grape juice

    The juice cocktail was then evenly divided among six smaller cups. About how much juice cocktail did each cup contain?

    (A) 1 cup
    (B) 2 cups
    (C) 2.5 cups
    (D) 6 cups

28. The scale of a model airplane shows that 0.8 inches on the model airplane represents five feet on the actual airplane. If the model airplane is 3.2 inches long, then what is the length of the actual airplane?

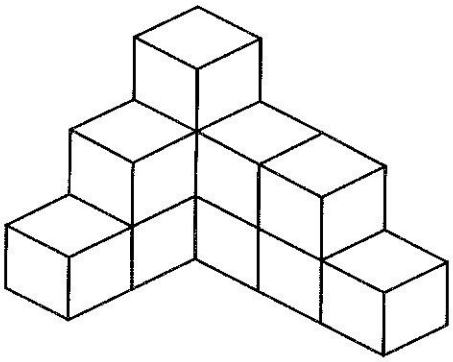
    (A) 0.8 feet
    (B) 3.2 feet
    (C) 4 feet
    (D) 20 feet

29. There are blue and green marbles in a bag. The probability that a green marble will be drawn from the bag is 5 out of 9. If there are 12 blue marbles in the bag, how many green marbles are there?

    (A) 15
    (B) 18
    (C) 20
    (D) 27

CONTINUE TO THE NEXT PAGE

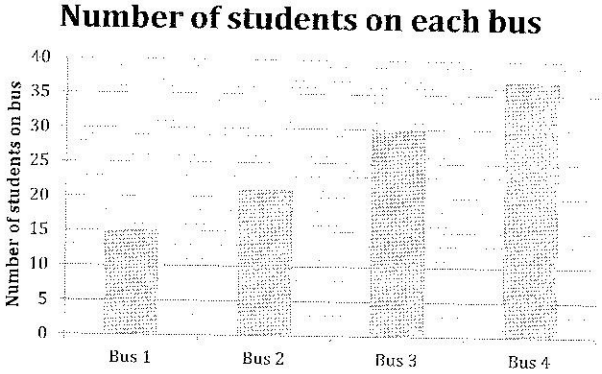
30. Use the figure below to answer the question.



How many small cubes were used to build the figure above?

(A) 9
(B) 11
(C) 15
(D) 20

31. A class counted up the number of students on each of four buses. The graph below shows what the students found.



Based on the above graph, which of the following conclusions is true about the number of students on each bus?

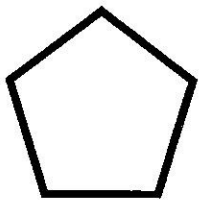
(A) There are more students on Bus 1 than there are on Bus 4.
(B) The range is greater than the number of students on Bus 2.
(C) The mean is the same as the number of students on Bus 1.
(D) There are more students on Bus 3 than there are on Bus 1 and Bus 2 combined.

CONTINUE TO THE NEXT PAGE

32. Which equation correctly represents the statement "3 less than twice a number is equal to six less than the number" if v represents the unknown number?

(A) $3 - (v \times 2) = 6 - v$
(B) $3 - (v \times 2) = v - 6$
(C) $(v \times 2) - 3 = 6 - v$
(D) $(v \times 2) - 3 = v - 6$

33. Use the figure below to answer the question.



How many lines of symmetry does the above figure have?

(A) 1
(B) 3
(C) 5
(D) 6

34. Maureen has a box of donuts. There are glazed, chocolate, vanilla, and sugared donuts in the box. The probability of choosing a glazed donut is 3 out of 7. Which combination of donuts is possible?

(A) 9 glazed donuts and 12 others
(B) 9 glazed donuts and 27 others
(C) 15 glazed donuts and 7 others
(D) 18 glazed donuts and 15 others

35. Use the expression below to answer the question.

$$\frac{39 \times 689}{20}$$

What is a reasonable estimate of the result of the above calculation?

(A) between 900 and 1100
(B) between 1100 and 1400
(C) between 1400 and 1800
(D) between 1800 and 2500

CONTINUE TO THE NEXT PAGE

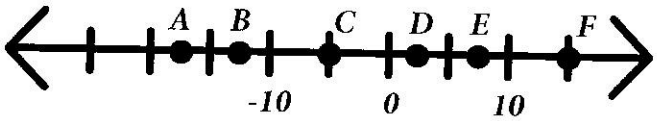
36. Use the equation below to answer the question.

$$\frac{5(45+5)}{10} = m$$

What is the value of m?

(A) 25
(B) 50
(C) 100
(D) 250

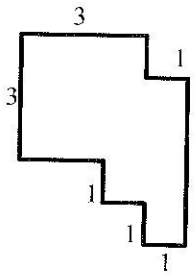
37. Use the number line below to answer the question.



Point C is the average of A and another point. Which point represents that other number?

(A) B
(B) D
(C) E
(D) F

38. Use the figure below to answer the question.



What is the perimeter of the figure above?

(A) 9
(B) 10
(C) 15
(D) 18

STOP. If you have time left, you may check your answers in ONLY this section.