

## Sample Problems from previous Mathletics Competitions:

### Written Test

Multiple Choice:

1.  $1+1 + 1+1 + 1+1 + 1+1 + 1+1 =$

- A)  $5 \times 2$
- B)  $4 \times 2$
- C)  $2 \times 2$
- D)  $1 \times 2$

2. Which figure has one more side than a square?

- A) a circle
- B) a pentagon
- C) a triangle
- D) a rectangle

3. What is the ones' digit of  $(100 \times 9) + (20 \times 9) + (3 \times 9)$ ?

- A) 0
- B) 7
- C) 8
- D) 9

4. Two dozen pairs of pears is ? pears.

- A) 12
- B) 24
- C) 40
- D) 48

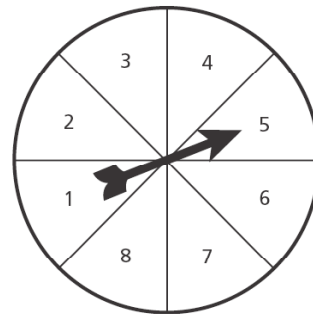
5.  $(11+11+11+11+11+11) - (9+9+9+9+9+9) =$

- A) 2
- B) 6
- C) 12
- D) 102

6. Rachel and Troy sold a total of 43 magazine subscriptions for their class fundraiser. Rachel sold 19 of those subscriptions. Which of these number sentences could be used to find the number of subscriptions Troy sold?

- A)  $19 - n = 43$
- B)  $n - 19 = 43$
- C)  $43 + n = 19$
- D)  $n + 19 = 43$

7. What is the probability that the spinner below will land on a number greater than five?



- A)  $\frac{1}{8}$
- B)  $\frac{3}{8}$
- C)  $\frac{5}{8}$
- D)  $\frac{1}{2}$

8. Every letter appeared 3 times in Di's alphabet soup. Di used some letters to spell the word "cholesterol." Using the remaining letters, she could *not* have spelled the word

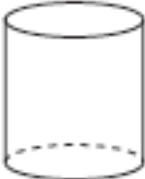

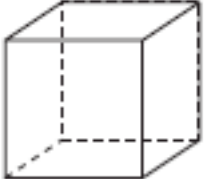

- A) "add"
- B) "subtract"
- C) "multiply"
- D) "divide"

9. What are the next three numbers in the pattern shown below?

3, 5, 8, 10, 13, \_\_\_\_, \_\_\_\_, \_\_\_\_

- A) 16, 18, 21
- B) 15, 18, 20
- C) 14, 16, 18
- D) 15, 18, 21

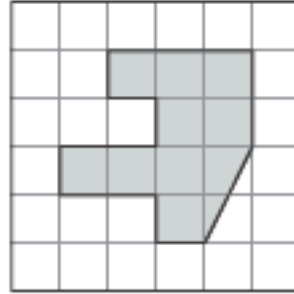
10. Which of these shapes has 6 faces?

- A) 
- B) 
- C) 
- D) 

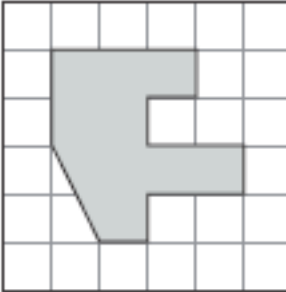
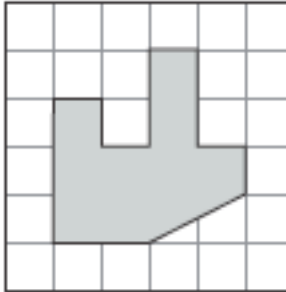
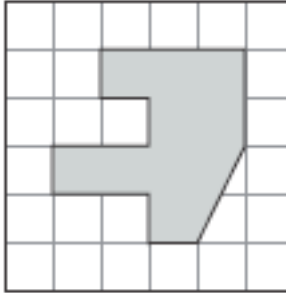
11. Which decimal number is greater than 3.185 but less than 3.195?

- A) 3.084
- B) 3.187
- C) 3.198
- D) 3.202

12. Look at the shape below.



What figure shows the shape flipped?

- A) 
- B) 
- C) 

Completion:

13. A man is 30 years older than his son. In 17 years he will be twice his son's age. How old is the son?

14. The agricultural school garden is rectangular in shape and measures 20' x 45'. The students plant beans in  $\frac{2}{3}$  of the garden. One half of that contains lima beans. How many square feet of the garden are planted in lima beans?

15. An Island has no currency; it instead has the following exchange rate:

50 bananas = 20 coconuts

30 coconuts = 12 fish

100 fish = 1 hammock.

How many bananas equal 1 hammock?

16. How many different types of pizza can you make with the following toppings: pepperoni, tomatoes, onions, and green peppers?

17. Tatiana has a box with 3 red markers, 4 blue markers, 2 orange markers, and 1 green marker. She picks one marker out of the box without looking. What is the probability that Tatiana will pick an orange marker?

18. Nancy's mom put a turkey in the oven at the time shown on the clock below.



She took the turkey out of the oven at 5:00. How long was the turkey in the oven?

### Finals Competition

Long Problems:

1. "Find the Perimeter"

The measurement of each side of the yellow hexagon found at your table is 1 inch. You have 10 yellow hexagons at your desk. Using all 10 hexagons, construct a solid figure that has a perimeter of 42 inches. Then use the 10 hexagons to construct another figure with a perimeter of 30 inches. Finally, construct a figure using all 10 hexagons having a perimeter of 24 inches.

2. "WHAT'S THE RULE"

Using the information from the chart below, What rule can you use to find the output value when the input value is known? A sample rule would be "The output value equals the input value plus two."

IN	OUT
6	27
1	-3
5	21
3	9
0	-9

3. "Mommy's Age"

Janet is presently one-sixth as old as her mother. Her mother's age, when divided by 2, 3, 4, 6, or 8, always leaves one remaining year. This is not so when her mother's present age is divided by 5, for then there is nothing left over. How old is Janet's mother?

How old is Janet?

Short Problems:

4. If a state decided to use 3 letters on each of their license plates, how many possible license plates could be made?

5. Using each digit once, make the smallest possible difference for a 5-digit by 5-digit subtraction problem.

6. What is the next number in the pattern?  
-2, 4, -8, 16, -32, \_\_\_\_

7. Using the Integer Rods, if the blue rod is equal to 1, what is the value of each of the following blocks in simplest form?

Blue = 1

Light Green =

White =

Yellow =

8. 45 Use the pattern blocks at your table for this problem. If the green triangle's area is  $0.43 \text{ in}^2$ , what is the area of the following:

Yellow Hexagon = \_\_\_\_\_

Red trapezoid = \_\_\_\_\_

Blue parallelogram = \_\_\_\_\_