Category II (Grades 5 & 6)

1. Which is the smallest three-digit number whose sum of digits is 15?

   A) 915   B) 195   C) 168   D) 159

2. How many divisors does 51 have?

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

3. Which one of the followings satisfies the equation below?

$$3 - \frac{5}{3-x} = x + \frac{1}{x-3} \ ?$$

   A) 3   B) – 5   C) – 1   D) 5

4. Jane has as many sisters as brothers. His brother Jimmy, has twice as many sisters than his brothers. How many siblings are there in the family?

   A) 4   B) 5   C) 6   D) 7

5. Solve $(0,0015)^3 \cdot (6000)^4$

   A) $2^6 3^5 5^6$ B) $2^3 3^5 5^3$ C) $2^4 3^7 5^3$ D) $2^4 3^5 5^6$

6. Jack lives on the second floor of a 16-story house, while Jane lives on the 14th floor. On which floor will they meet each other if Jack takes twice as many steps?

   A) 9   B) 10   C) 11   D) 8

7. There are 3 roads from city A to city B. There are 6 roads from city B to city C. How many different roads go from city A to city C?

   A) 18   B) 11   C) 6   D) 15

8. How many three-digit natural numbers are there that consist of different odd numbers and its numbers are in descending order?

   A) 6   B) 8   C) 10   D) 12

9. In the addition table below, the letters A, B, and C each stand for a positive number. Accordingly, what is the value of B?

+	A	B	C
A		10	
B			5
C	3B		

   A) 2   B) 3   C) 4   D) 5

10. Two cars came out of two cities to meet each other. One went a third of the way, the other a sixth. After that, the distance between them turned out to be 60 km. Find the distance between the cities.

   A) 90 km   B) 120 km   C) 80 km   D) 150 km

11. Solve the equation below:

$$\frac{\left(2\frac{38}{45}-\frac{1}{15}\right)\div 13\frac{8}{9}+3\frac{3}{65}\cdot\frac{26}{99}}{\left(18\frac{1}{2}-13\frac{7}{9}\right)\cdot\frac{1}{85}}\cdot 0,5=?$$

   A) 1   B) 2   C) 4   D) 9

12. 6 workers place 6 blocks in 2 minutes. How many blocks will 2 workers place in 12 minutes?

   A) 3   B) 6   C) 8   D) 12

13. The ages of mother and father are 45 and 43 years. The children are 10, 7 and 5 years old, respectively. How old will the youngest child be when the total age of the parents is 2 times the total age of the children?

   A) 14   B) 16   C) 18   D) 20

14. Nick, Tom and Simon have 13 hats together. Tom, Simon and Jack – 17. Jack, Simon and Nick - 20, and Nick, Tom and Jack - 22. How many hats does Tom have?

   A) 2   B) 4   C) 6   D) 8

15. 10 students in the class walk in the circle of mathematics, 14 - in physics, 13 - in informatics, 10 students walk in at least two circles at once, and 2 students - in all three circles. How many students do not walk in any circle if there are 27 students in a class?

   A) None   B) 4   C) 3   D) 2

16. At a party, 30 girls stand around a circular-shaped stage. Shota liked every third girl, and Saba liked every fifth. How many girls stand around the stage like neither Shota nor Saba like?

   A) 12   B) 14   C) 16   D) 18

17. The insect placed in the pot doubles every two minutes. In how many minutes will a bank quarter be filled if the entire bank is filled in 24 minutes?

   A) 6   B) 15   C) 20   D) 22

18. 12 points are taken on a circle. Each point is connected to each other by lines (except for adjacent points). How many lines are crossed?

   A) 54   B) 60   C) 96   D) 108

19. What number should replace the question mark?
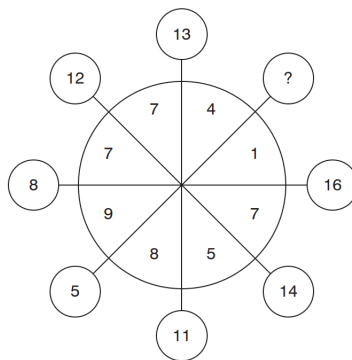
   A) 17   B) 15   C) 11   D) 18

20. The numbers 12345678910111213… are written in order on the board. What digit is written in 198th place?

   A) 5   B) 4   C) 3   D) 2

21. Natural numbers are written on the board in the following order:10, 9, 8, 7,. 3, 2, 1. Students are asked to put a "+" or "-" sign between each of the two numbers and write the result in notebooks. George got 15, Luke - 18, Saba - 26, Tatia - 33, Mariam - 38 and Salome - 45. How many of them can we say for sure that he made a mistake in the calculation?

   A) 1   B) 2   C) 3   D) 4

22. A group of tourists bought a total of 43 pieces of ice cream. Some of them bought five pieces while others bought six pieces. How many tourists were in this group?
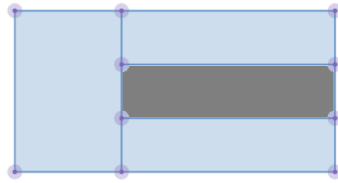
   A) 10   B) 7   C) 6   D) 8

23. Given a triangle, four dots are marked on its sides. Which two points must be joined by a section to divide a given triangle into two triangles?
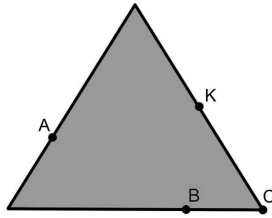
A) A and B   B) K and B   C) A and C   D) K and A

24. A rectangle whose length is twice its width, is divided into 4 rectangles with equal areas. How do the sides of a darkened rectangle relate to each other?

A) 1:6   B) 1:4   C) 2:7   D) 2:9

25. For the sequence 2, 8, 32, 128, ... the 6th term will be

A) 2048   B) 1024   C) 512   D) 256