

SAMPLE QUESTIONS FOR SECOND INTRA SCHOOL MATHEMATICS OLYMPIAD 2011

CLASS VII

QUESTIONS

1. Amitabh Bacchan has four cards . How many different three-digit numbers can he make with these cards?



2. Study the following pattern. What is the sum of the first 30 odd numbers?

$$\begin{aligned}1 &= 1 \\1 + 3 &= 4 \\1 + 3 + 5 &= 9 \\1 + 3 + 5 + 7 &= 16 \\1 + 3 + 5 + 7 + 9 &= 25\end{aligned}$$

3. The number of hours that were left in the day was one-third of the number of hours which had already passed. How many hours were left in the day?
4. The three digits of a three-digit number add up to 25. How many such three-digit numbers are there?
5. What is the maximum area of a rectangle whose perimeter is 100 cm?

SOLUTIONS

1.

You have got 4 digits to choose from for the first digit, three numbers to choose from for the second digit and two numbers to choose from for the third digit.

Calculation: $4 \times 3 \times 2 = 24$. Alternatively, list all the possible permutations.

2.

The sum of consecutive odd numbers is the square of the total number of consecutive odd numbers.

Calculation: $30 \times 30 = 900$

3.

A day has 24 hours. Try all the different possibilities i.e. 1 and 23; 2 and 22; 3 and 21 etc.

Calculation: 6 and 18. 6 is $\frac{1}{3}$ of 18.

4.

There are only two combinations of 3 digits that add up to 25 i.e. 9+9+7 and 9+8+8. Get all the possible numbers that you can form with the digits.

Calculation: 997; 979; 799; 988; 989; 889.

So, 6 numbers

5.

The maximum area occurs when the rectangle becomes a square. Each side is 25 cm. The area is 625 cm^2 .