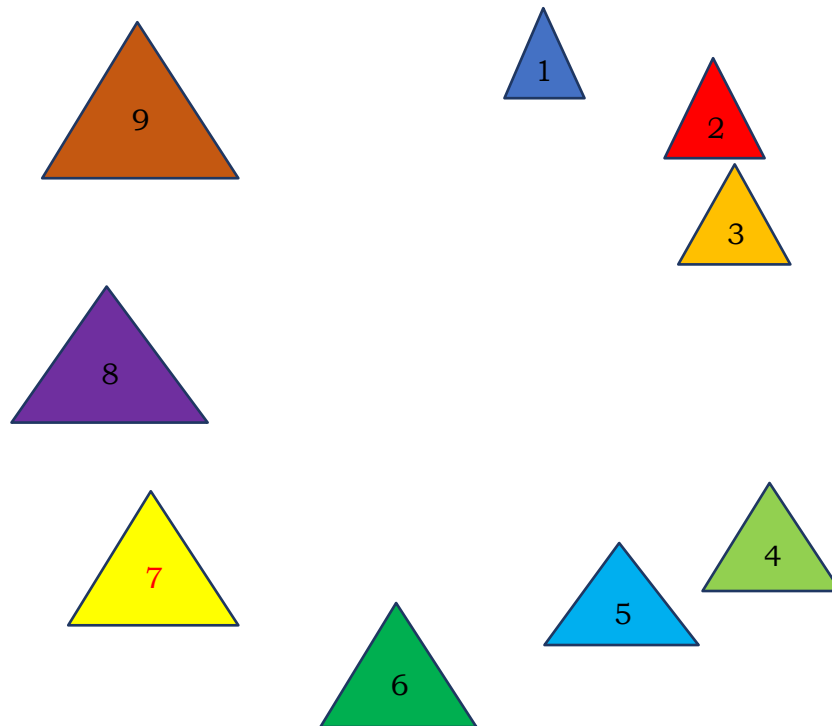


CCT Weekly-MATHEMATICS

Unit: Number Fun



Rajeev and Sanjeev were feeling bored during the lockdown. They both created a number game. Sanjeev prepared nine equilateral triangles and numbered them from 1 to 9. The numbers written on the triangles also represented length of each side of the triangle (in cm). Sanjeev arranged them in the form of a circle. He asked Rajeev to remove alternate triangles starting from number 1, going clockwise, until only one triangle remained.

Question 1:

The triangles which Rajeev removed in the first round are, in order, numbered 1, 3, 5, 7, 9,...

If Rajeev continues in the same manner, which numbered triangle will be left in the last?

- a) 4
- b) 2
- c) 8
- d) 6

Question 2:

In the second round, Sanjeev started counting with triangle numbered as 1 and eliminated every third triangle, until only one triangle remained. Which of the following triangle will be left in the end?

Triangle no.-

- a) 1
- b) 3
- c) 7
- d) 6

Question 3:

Rajeev added two more triangles in the circle and numbered these as triangle 10 and triangle 11. In this round, Rajeev started counting with triangle numbered as 1, but anticlockwise, and eliminated every fifth triangle, until only one triangle remained. Which triangle will be left in the end?

Triangle no.-

- a) 4
- b) 2
- c) 8
- d) 5

Question 4:

If there are 9 triangles, will the perimeters of the triangles follow any pattern? If so, write the pattern?

Question 5:

The area of an equilateral triangle is found using $\frac{\sqrt{3}}{4}(\text{side})^2$.

Are the areas of the triangles numbered 3, 4 and 6, 8 in proportion? Justify your answer.

CCT Weekly-MATHEMATICS

Answer Key

Question 1: b) 2

Question 2: a) 1

Question 3: d) 5

Question 4:

The perimeters will be 3cm, 6cm, 9cm, 12 cm....

They are multiples of 3 or increasing with a difference 3.

Question 5:

Area of these triangles are $\sqrt{3}/4 (3)^2$, $\sqrt{3}/4 (4)^2$, $\sqrt{3}/4 (6)^2$, $\sqrt{3}/4 (8)^2$,

Ratio of the areas of first two triangles is 9:16 and that of last two triangles is 36: 64 = 9: 16.

Hence, they are in proportion.

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