

Mathematics

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(Chapter – 6) (Lines and Angles)(Exemplar Problems)

(Class – IX)

Exercise 6.1

Write the correct answer in each of the following:

Question 8:

Angles of a triangle are in the ratio 2 : 4 : 3. The smallest angle of the triangle is

(A) 60° (B) 40° (C) 80° (D) 20°

Answer 8:

(A) 60°

Solution:

Given that:

The ratio of angles of a triangle is 2:4:3.

Let the angles of the triangle be $\angle A$, $\angle B$ and $\angle C$.

$$\therefore \quad \angle A = 2x, \angle B = 4x \text{ and } \angle C = 3x$$

In $\triangle ABC$, $\angle A + \angle B + \angle C = 180^\circ$

[Sum of angles of a triangle is 180°]

$$\Rightarrow \quad 2x + 4x + 3x = 180^\circ$$

$$\Rightarrow \quad 9x = 180^\circ$$

$$\Rightarrow \quad x = \frac{180^\circ}{9} = 20^\circ$$

$$\therefore \quad \angle A = 2x = 2 \times 20^\circ = 40^\circ$$

$$\angle B = 4x = 4 \times 20^\circ = 80^\circ$$

and $\angle C = 3x = 3 \times 20^\circ = 60^\circ$

Hence, the smallest angle of a triangle is 40° and option (A) is correct.

