

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 2:

If one angle of a triangle is equal to the sum of the other two angles, then the triangle is

- (A) an isosceles triangle
- (B) an obtuse triangle
- (C) an equilateral triangle
- (D) a right triangle

Answer 2:

- (D) a right triangle

Solution:

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

Given that

$$\angle A = \angle B + \angle C \quad \dots (i)$$

$$\text{But, in any } \triangle ABC \quad \angle A + \angle B + \angle C = 180^\circ \quad \dots (ii)$$

[Angles sum property of triangle]

From equations (i) and (ii), we get

$$\Rightarrow \angle A + \angle A = 180^\circ$$

$$\Rightarrow 2\angle A = 180^\circ$$

$$\Rightarrow \angle A = \frac{180^\circ}{2}$$

$$\therefore A = 90^\circ$$

Hence, the triangle is a right triangle and option (D) is correct.

