Properties of Triangles Ex 15.5 Q1

Answer :

The Pythagoras Theorem: In a right triangle, the square of the hypotenuse is always equal to the sum of the squares of the other two sides.

Converse of the Pythagoras Theorem: If the square of one side of a triangle is equal to the sum of the squares of the other two sides, then the triangle is a right triangle, with the angle opposite to the first side as right angle.

Properties of Triangles Ex 15.5 Q2

Answer :

According to the Pythagoras theorem,

$$(\text{Hypotenuse})^2 = (\text{Base})^2 + (\text{Height})^2$$

$$(\text{i})\ c^2 = a^2 + b^2$$

$$c^2 = 6^2 + 8^2$$

$$c^2 = 36 + 64 = 100$$

$$c = 10\ \text{cm}$$

$$(\text{ii})\ c^2 = a^2 + b^2$$

$$c^2 = 8^2 + 15^2$$

$$c^2 = 64 + 225 = 289$$

$$c = 17\ \text{cm}$$

$$(\text{iii})\ c^2 = a^2 + b^2$$

$$c^2 = 3^2 + 4^2$$

$$c^2 = 9 + 16 = 25$$

$$c = 5\ \text{cm}$$

$$(\text{iv})\ c^2 = a^2 + b^2$$

$$c^2 = 2^2 + 1.5^2$$

$$c^2 = 4 + 2.25 = 6.25$$

$$c = 2.5\ \text{cm}$$

********** END **********