

Properties of Triangles Ex 15.4 Q3

Answer:

(i) False

We know that the sum of any two sides of a triangle is greater than the third side; it is not true for the given triangle.

(ii) True

We know that the sum of any two sides of a triangle is greater than the third side; it is true for the given triangle.

(iii) False

We know that the sum of any two sides of a triangle is greater than the third side; it is not true for the given triangle.

Properties of Triangles Ex 15.4 Q4

Answer

Because the sum of any two sides of a triangle is always greater than the third side, in triangle OAB, we have:

$$\begin{split} OA + OB > AB & \dots \text{(i)} \\ OB + OC > BC & \dots \text{(ii)} \\ OA + OC > CA & \dots \text{(iii)} \\ \text{On adding equations (i), (ii) and (iii), we get:} \\ OA + OB + OB + OC + OA + OC > AB + BC + CA \\ 2\left(OA + OB + OC\right) > AB + BC + CA \\ OA + OB + OC > \frac{AB + BC + CA}{2} \end{split}$$

Properties of Triangles Ex 15.4 Q5

Answer:

Because the smallest side is always opposite to the smallest angle, which in this case is 30°, it is AC. Also, because the largest side is always opposite to the largest angle, which in this case is 100°, it is BC.

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