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:

$$OA + OB > AB \quad \ldots (\text{i})$$
$$OB + OC > BC \quad \ldots (\text{ii})$$
$$OA + OC > CA \quad \ldots (\text{iii})$$
$$\text{On adding equations } (\text{i}), (\text{ii}) \text{ and } (\text{iii}), \text{ we get :}$$
$$OA + OB + OB + OC + OA + OC > AB + BC + CA$$
$$2(OA + OB + OC) > AB + BC + CA$$
$$OA + OB + OC > \frac{AB+BC+CA}{2}$$

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^{o}, it is AC.
Also, because the largest side is always opposite to the largest angle, which in this case is 100^{o}, it is BC.

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