Congruence Ex 16.1 Q6

Answer :

$\angle AOC \cong \angle PYR \ldots\ldots\ldots (i)$
$Also, \angle BOC \cong \angle QYR$
$Now, \angle AOC = \angle AOB + \angle BOC \; and \; \angle PYR = \angle PYQ + \angle QYR$
$By \; putting \; the \; value \; of \angle AOC \; and \; \angle PYR \; in \; equation (i), \; we \; get :$
$\angle AOB + \angle BOC \cong \angle PYQ + \angle QYR$
$\angle AOB \cong \angle PYQ \; (\angle BOC \cong \angle QYR)$
$Hence \; \angle AOB \cong \angle PYQ$

Congruence Ex 16.1 Q7

Answer :

i) False. All the sides of a square are of equal length. However, different squares can have sides of different lengths. Hence all squares are not congruent.

ii) True
Area of a square = side ×side
Therefore, two squares that have the same area will have sides of the same lengths. Hence they will be congruent.

iii) False
Area of a rectangle = length × breadth
Two rectangles can have the same area. However, the lengths of their sides can vary and hence they are not congruent.
Example: Suppose rectangle 1 has sides 8 m and 8 m and area 64 metre square.
Rectangle 2 has sides 16 m and 4 m and area 64 metre square.
Then rectangle 1 and 2 are not congruent.

iv) False
Area of a triangle = $\frac{1}{2} \times \mathbf{base} \times \mathbf{height}$
Two triangles can have the same area but the lengths of their sides can vary and hence they cannot be congruent.

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