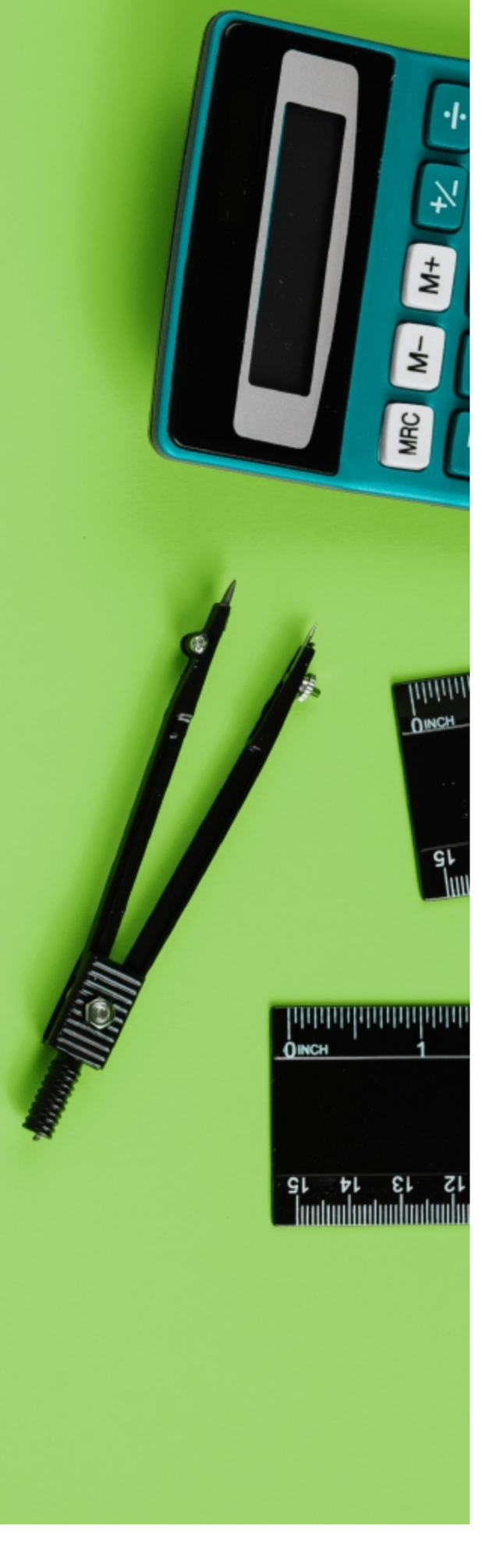
RD Sharma Solutions

Class 7

aglasem.com



Chapter-16 Congruence

Exercise 16-1

Q.1 Explain the concept of congruence of figures with the help of certain examples.

Solution: Two figures are said to be congruent if they are same in shape and size or we can say mirror image of each other.

For example: Circles of same radius, Palm of both hands. etc.

Q.2 Fill in the blanks:

(i) Two line segments are congruent if _____

(ii) Two angles are congruent if _____

(iii) Two squares are congruent if _____

(iv) Two rectangles are congruent if _____

(v) Two circles are congruent if _____

Solution: (i) They are of same lengths

(ii) they are of same measure.

(iii) they have equal side length

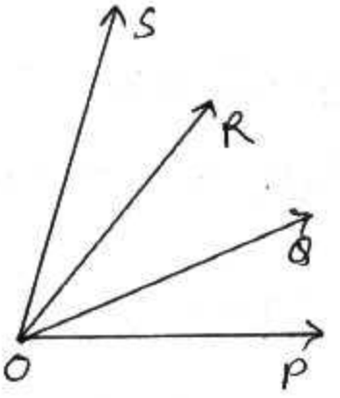
(iv) they have equal side length

(v) They have same radii

docs.aglasem.com

aglasem.com

Q.3 In fig. 6, $\angle POQ \cong \angle ROS$, can we say that $\angle POR = \angle QOS$



Solution:

$\because \angle POQ \cong \angle ROS$

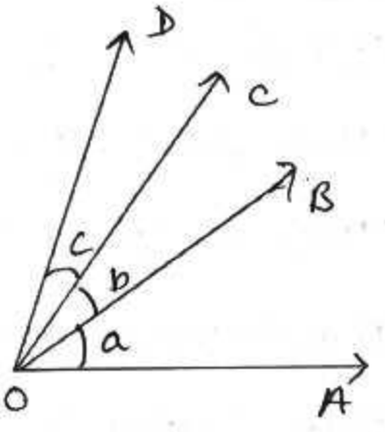
then $\angle POQ = \angle ROS$

Adding $\angle ROQ$ both sides

$\angle POQ + \angle ROQ = \angle ROS + \angle ROQ$

$\Rightarrow \angle POR = \angle QOS$

Q.4 In fig. 7, $a = b = c$, name the angle which is congruent to $\angle AOC$.



Solution: In fig $a = b = c$

$\therefore \angle AOB = \angle BOC = \angle COD$

Therefore $\angle AOB = \angle COD$

also $\angle AOB + \angle BOC = \angle COD + \angle BOC$

$\Rightarrow \angle AOC = \angle BOD$

hence $\angle BOD = \angle AOC$

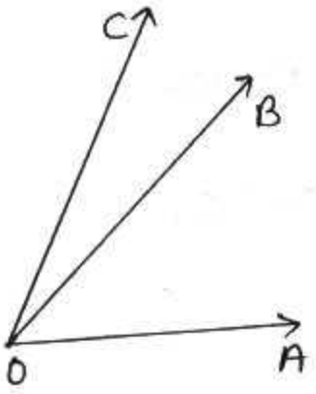
Q.5 Is it correct to say that any two right angles are congruent? Give reasons to justify your answer.

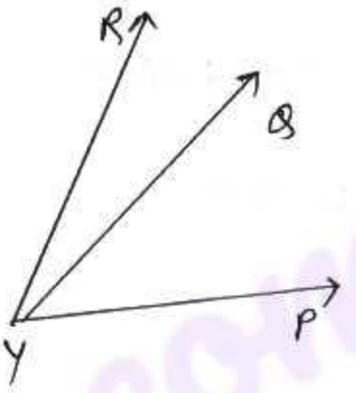
docs.aglasem.com

aglasem.com

Solution: Yes, two right angles are congruent because they have the same measure.

Q.6 In fig. 8, $\angle AOC = \angle PYR$ and $\angle BOC = \angle QYR$. Name the angle which is congruent to $\angle AOB$.





Solution: Here $\angle AOC = \angle PYR$ --- (i)

$\angle BOC = \angle QYR$ --- (ii)

Subtracting eqn (2) from eqn (1)

$\angle AOC - \angle BOC = \angle PYR - \angle QYR$

$\Rightarrow \angle AOB = \angle PYQ$

$\therefore \angle PYQ$ is congruent to $\angle AOB$.

Q.7 which of the following statements are true and which are false.

(i) All squares are congruent.

(ii) If two squares have equal areas, they are congruent.

docs.aglasem.com

aglasem.com

(iii) If two rectangles have equal areas they are congruent.

(iv) If two triangles are equal in area, they are congruent.

Solution: (i) False (ii) True

(iii) False (iv) False.

aglasem.com

docs.aglasem.com

aglasem.com