Review Exercise 12

Q.1 Which of the following are true and which are false?

(i) Bisection means to divide into two equal parts (True)

(ii) Right bisection of line segment means to draw perpendicular which passes through the midpoint of line segment (True)

(iii) Any point on the right bisector of a line segment is not equidistant from its end points (False)

(iv) Any point equidistant from the end points of a line segment is on the right bisector of it (True)

(v) The right bisectors of the sides of a triangle are not concurrent (False)

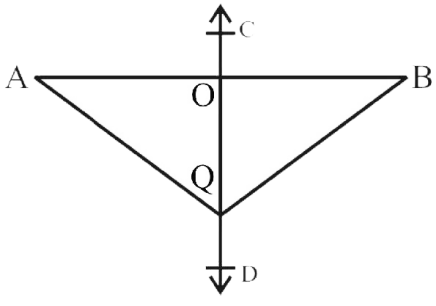
(vi) The bisectors of the angles of a triangle are concurrent (True)

(vii) Any point on the bisector of an angle is not equidistant from its arms (False)

(viii) Any point inside an angle equidistant from its arms, is on the bisector of it (True)

Q.2 If $\overleftrightarrow{CD}$ is right bisector of line segment $\overline{AB}$, then

(i) $m\overline{OA}$ = _____ (ii) $m\overline{AQ}$ = _____



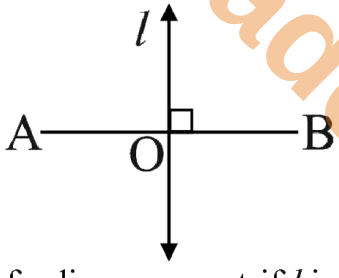
Solution

(i) $m\overline{OA} = m\overline{OB}$

(ii) $m\overline{AQ} = m\overline{BQ}$

Q.3 Define the following

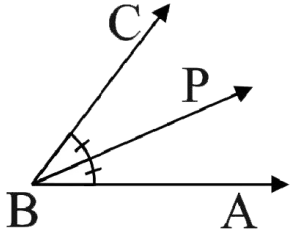
(i) Right Bisector of a Line Segment



A line l is called a right bisector of a line segment if l is perpendicular to the line segment and passes through its midpoint.

(ii) Bisector of an Angle

A ray BP is called the bisector of $m\angle ABC$, if P is a point in the interior of the angle and $m\angle ABP = m\angle PBC$.



Q.4 **The given triangle ABC is equilateral triangle and $\overline{AD}$ is bisector of angle A, then find, the values of unknown x^o, y^o and z^o.**

Solution

In equilateral triangle all side are equal to each and there angle of the triangle equal to 60^o.

So

$\angle B = z^o = 60^o$

$\overline{AD}$ is the bisector of $\angle A$

$\angle A = 60^o$

$\therefore$ When angle A is bisected

$x^\circ = y^\circ$

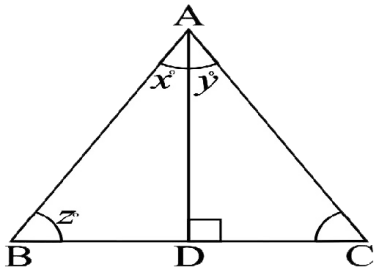
$$x^\circ = \frac{1}{2} m\angle A$$

$$= \frac{1}{2} \times 60^\circ$$

$$x^\circ = 30^\circ$$

$$y^\circ = 30^\circ \quad (\because x^\circ = y^\circ)$$

So $x^o = y^o = 30^\circ$



Q.5 **In the given congruent triangle LMO and LNO find the unknowns x and m given**

$\Delta LMO \cong \Delta LNO$

$m\overline{LM} = m\overline{LN}$

$2x + 6 = 18$

$2x = 18 - 6$

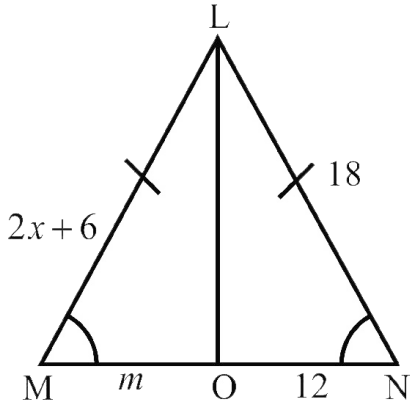
$2x = 12$

$$x = \frac{\cancel{12}^{6}}{\cancel{2}}$$

$x = 6$ Unit

$m\overline{MO} = m\overline{ON}$

$\therefore m = 12$ unit



Q.6 **CD is right bisector of the line segment AB**

(i) **If $m\overline{AB} = 6cm$ then find the $m\overline{AL}$ and $m\overline{LB}$**

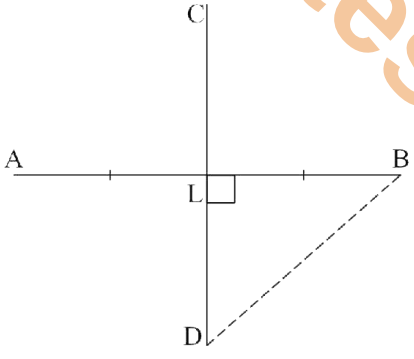
Solution

L is the midpoint of $\overline{AB}$

$\therefore m\overline{AL} = m\overline{LB}$

$$m\overline{AL} = \frac{1}{2} mAB = \frac{1}{2} \times 6$$

So $m\overline{AL} = 3cm$



$m\overline{\text{LB}} = 3\text{cm} \quad \left(\therefore m\overline{AL} = m\overline{LB}\right)$

(ii) If $m\overline{\text{BD}} = 4\text{cm}$ **then find m** $\overline{\text{AD}}$

$m\overline{AD} = m\overline{BD}$ (Any point on the right bisector of a line segment is equidistant from its end points.)

$m\overline{AD} = 4$

$m\overline{AD} = 4cm$