24/06/2021.

Date
Page

6.1

1) Ans Line AB and CD intersect at O

$\angle AOC + \angle BOE = 70^\circ$

$\angle BOD = 40^\circ$

$\angle AOC = \angle BOD$

(Vertically opposite angle)

Therefore, $\angle AOC = 40^\circ$

and $40^\circ + \angle BOE = 70$

$\angle BOE = 70 - 40 = 30^\circ$

Also $\angle AOC + \angle BOE + \angle COE = 180^\circ$

$\Rightarrow 70^\circ + \angle COE = 180^\circ$

$\angle COE = 180 - 70 = 110^\circ$

$\angle COE = 360 - 110^\circ = 250^\circ$

Hence $\angle BOE = 30^\circ$ and reflex $\angle COE = 250^\circ$

2) Ans In the figure, lines XY and MN intersect at O and $\angle POY = 90^\circ$

Also, given, $a : b = 2 : 3$

Let $a = 2x$ and $b = 3x$

Since, $\angle XOM + \angle POM + \angle POY = 180$

$\Rightarrow 3x + 2x + 90 = 180$

$5x = 180 - 90$

$x = \frac{90}{5} = 18$

$\angle XOM = b = 3x = 3 \times 18 = 54$

$\angle POM = a = 2x = 2 \times 18 = 36$

Now, $\angle XOM = c = \angle MOY = \angle POM + \angle POY$ (Vertically opposite angles)

$= 36 + 90 = 126$

Hence, $c = 126$

3.) Ans. $\angle PQS + \angle PQR = 180$ (Linear pair axiom)

$\angle PRQ + \angle PRT = 180$ (Linear pair axiom)

But, $\angle PQR = \angle PRQ$

$\therefore$ From (1) & (2)

$\angle PQS = \angle PRT$

4.) Assume AOB is a line.

Therefore, $x+y = 180°$ (linear pair axiom)

$w+z = 180°$ (linear pair axiom)

Now from (1) and (2)

$x+y = w+z$

Hence, our assumption is correct, AOB is a line proved.

5.) Ans $\angle ROS = \angle QOS - \angle POS$ - (1)

$\angle ROS = \angle QOS - \angle QOS$

Adding (1) and (2)

$\angle ROS + \angle ROS = \angle QOS - \angle QOR + \angle ROP - \angle POS$

$\Rightarrow 2\angle ROS = \angle QOS - \angle POS$ $(\because \angle QOR = \angle ROP = 90°)$

Date
Page

5) $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$

6) Ans Form figure,

$\angle XYZ = 64^\circ$

Now $\angle ZYP + 64^\circ = 180^\circ$

$\angle ZYP = 180^\circ - 64^\circ = 116^\circ$

Also given that ray YQ bisects $\angle ZYQ$

But, $\angle ZYP = \angle QYP + \angle QYZ = 116^\circ$

$\angle QYP = 58^\circ$ and $\angle QYZ = 58^\circ$

$\angle XYQ = \angle XYZ + \angle QYZ$

$\angle XYQ = 64^\circ + 58^\circ = 122^\circ$

$\angle QYP = 360^\circ - \angle QYP = 360^\circ - 58^\circ$
$= 302^\circ$
$(\angle QYP = 58^\circ)$

Hence, $\angle XYQ = 122^\circ$ and reflex $\angle QYP = 320^\circ$