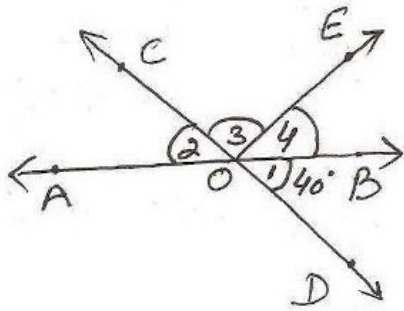


class ix lines and angles ex 6.1 P2

①



to find  $\angle BOE$   
reflex  $\angle COE$

Solution

$$\angle 2 = \angle 1 = 40^\circ \text{ [vertically opp. } \angle\text{s]}$$

$$\angle 2 + \angle 4 = 70^\circ \text{ (given)}$$

$$40^\circ + \angle 4 = 70^\circ$$

$$\Rightarrow \angle 4 = 70^\circ - 40^\circ$$

$$\Rightarrow \angle BOE = 30^\circ$$

$$\angle 2 + \angle 3 + \angle 4 = 180^\circ \text{ [sum of angles on a st. line]}$$

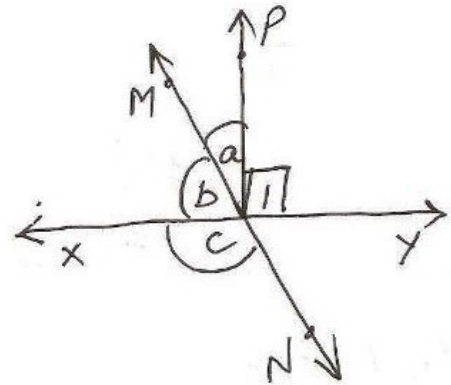
$$40^\circ + \angle 3 + 30^\circ = 180^\circ$$

$$\Rightarrow \angle 3 = 180^\circ - 70^\circ$$

$$\Rightarrow \angle COE = 110^\circ$$

$$\text{reflex } \angle COE = 360^\circ - 110^\circ = 250^\circ$$

②



Sol  $a : b = 2 : 3$

let  $a = 2x$ ,  $b = 3x$

$$\angle 1 + a + b = 180^\circ \text{ [sum of angles on a st. line]}$$

$$90^\circ + 2x + 3x = 180^\circ$$

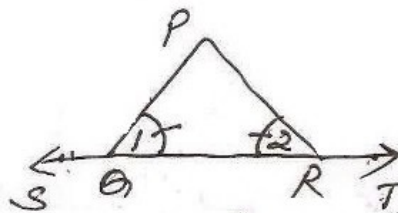
$$\Rightarrow 5x = 180^\circ - 90^\circ$$

$$\Rightarrow x = \frac{90^\circ}{5} = 18^\circ$$

$$a = 2 \times 18^\circ = 36^\circ$$

$$c = \angle 1 + a = 90^\circ + 36^\circ = 126^\circ$$

③



to prove  $\angle PQS = \angle PRT$

proof  $\angle 1 = \angle 2$  (given)

$$\angle 1 + \angle P = \angle 2 + \angle P$$

$$\angle PRT = \angle PQS \text{ [exterior angle prop. of } \Delta\text{]}$$