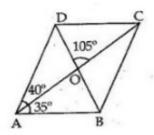


Exercise 9B

## Question 4: ABCD is a parallelogram



[vertical opposite angle]

Now in AAOB, we have

$$\angle OAB + \angle AOB + \angle ABO = 180^{\circ}$$

$$\Rightarrow$$
 35° +105° +  $\angle$ ABO = 180°

$$\Rightarrow$$
  $\angle ABO = 180^{\circ} - 140^{\circ} = 40^{\circ}$ .

(ii) Since AB | DC and BD is a transversal

So, 
$$\angle ABD = \angle CDB$$
 [alternate angles]

$$\Rightarrow$$
  $\angle$ CDO =  $\angle$ CDB =  $\angle$ ABO =  $\angle$ ABO =  $40^{\circ}$ 

(iii) As AB ∥ CD and AC is a transversal

So, 
$$\angle ACB = \angle DAC = 40^{\circ}$$

[alternate opposite angles]

(iv) 
$$\angle CBD = \angle B - \angle ABO$$

But, 
$$\angle A + \angle B + \angle C + \angle D = 360^{\circ}$$

[: ABCD is a parrellogram]

$$\Rightarrow 2\angle A + 2\angle B = 360^{\circ}$$

$$\Rightarrow 2 \times (40^{\circ} + 35^{\circ}) + 2 \angle B = 360^{\circ}$$

$$\Rightarrow 150^{\circ} + 2\angle B = 360^{\circ}$$

$$\Rightarrow 2\angle B = 360^{\circ} - 150^{\circ} = 210^{\circ}$$

$$\Rightarrow \angle B = \frac{210^{\circ}}{2} = 105^{\circ}$$

and
$$\angle$$
CBD =  $\angle$ B -  $\angle$ ABO

$$=105^{\circ}-40^{\circ}=65^{\circ}$$

$$\angle CBD = 65^{\circ}$$

\*\*\*\*\*\*\* END \*\*\*\*\*\*