

Answer 109.

$\Delta AOB \cong \Delta EOB$ by SSS property $\left(\begin{array}{l} \because BA = BE \\ OA = OE \\ OB = OB \end{array} \right)$

$$\angle 1 = \angle 2 \dots\dots(i) \quad (\text{C.P.C.T.})$$

Similarly $\angle 3 = \angle 4 \dots\dots(ii)$

$$\angle ABD + \angle CDB = 180^\circ \quad (\text{co interior angles})$$

$$\angle 1 + \angle 2 + \angle 3 + \angle 4 = 180^\circ$$

$$2\angle 1 + 2\angle 3 = 180^\circ \quad (\text{using i and ii})$$

$$\angle 1 + \angle 3 = 90^\circ$$

In ΔDOB

$$\angle 1 + \angle 3 + \angle BOD = 180^\circ \quad (\text{angle sum property of triangle})$$

$$90^\circ + \angle BOD = 180^\circ$$

$$\angle BOD = 90^\circ$$

