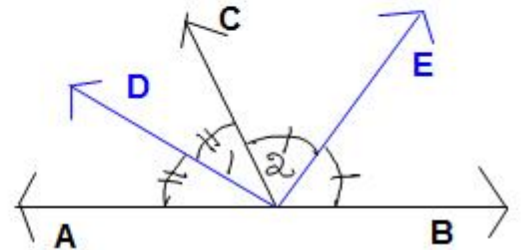


Lines and Angles, Ex 6.3 Page 1

NCERT Exempar Solutions by Dev Anoop (Bathinda)

① given - In fig $OD \perp OE$

to prove - Points A, O, B
are collinear



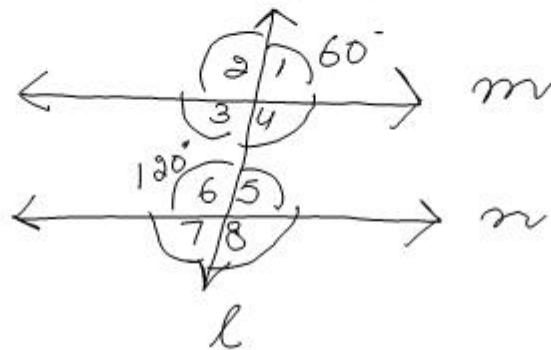
proof

$$\begin{aligned}
 & OD \perp OE \\
 \Rightarrow & \angle DOE = 90^\circ \\
 \Rightarrow & \angle 1 + \angle 2 = 90^\circ \\
 (\times 2) & \quad 2\angle 1 + 2\angle 2 = 180^\circ \\
 \Rightarrow & \angle AOC + \angle BOC = 180^\circ \quad \left(\begin{array}{l} OD \text{ bis } \angle AOC \\ OE \text{ bis } \angle BOC \end{array} \right)
 \end{aligned}$$

\Rightarrow AOB is a st. line (linear pair axiom)

\therefore Points A, O, B are collinear

②



to show $m \parallel n$

$$\begin{aligned}
 \text{proof} \quad & \angle 1 + \angle 4 = 180^\circ \\
 & 60^\circ + \angle 2 = 180^\circ \\
 \Rightarrow & \angle 2 = 180^\circ - 60^\circ \\
 & = 120^\circ \\
 & \angle 6 = 120^\circ \\
 \therefore & \angle 4 = \angle 6 \\
 & \text{But these are alt. int. } \angle s \\
 & m \parallel n
 \end{aligned}$$