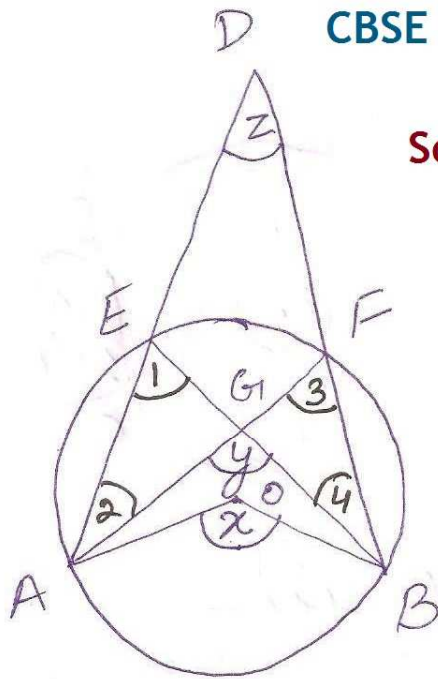


①



Solutions by Dev Anoop (Bathinda)

to prove  $x = y + z$

proof  $x = 2\angle 1$  [angle subtended by an arc at centre of  $\odot$  is twice the angle sub. by it on remain. part of  $\odot$ ]

$$\Rightarrow x = \angle 1 + \angle 1 \quad [\text{angles in same segment}]$$

$$= \angle 1 + \angle 3$$

$$= y - \angle 2 + \angle 2 + \angle 2$$

$$y = \angle 1 + \angle 2 \quad (\text{exterior } \angle \text{ prop. of } \Delta)$$

$$\Rightarrow \angle 1 = y - \angle 2$$

$$\angle 3 = \angle 2 + z \quad (\text{do})$$

Solutions by Dev Anoop (Bathinda)

$$\Rightarrow x = y + z$$

or

$$\angle 3 = \angle 2 + z \quad (\text{exterior angle prop. of } \Delta)$$

$$\text{But } \angle 3 = \angle 1 \quad (\text{angles in same segment})$$

$$\angle 1 = \angle 2 + z$$

$$2\angle 1 = \angle 1 + \angle 2 + z \quad (\text{adding } \angle 1 \text{ on both sides})$$

$$x = y + z$$

$$x = 2\angle 1 \quad (\text{angle sub. by } \dots)$$

$$y = \angle 1 + \angle 2 \quad (\text{exterior } \angle \text{ prop. of } \Delta)$$

Solutions by Dev Anoop (Bathinda)