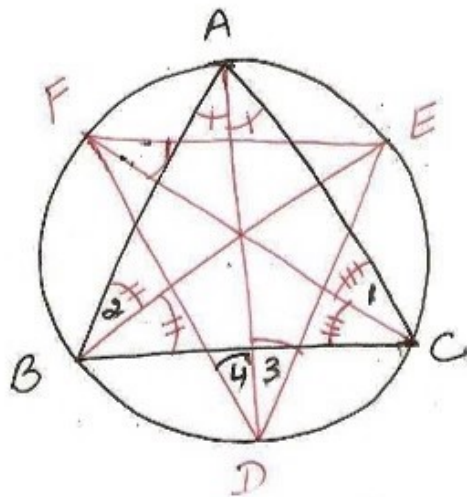


ex 10.6

8



To Prove -  $\angle D = 90^\circ - \frac{\angle A}{2}$ ,  
 $\angle E = 90^\circ - \frac{\angle B}{2}$ ,  $\angle F = 90^\circ - \frac{\angle C}{2}$

Proof  $\angle 2 = \angle 3 \dots$  (i) [angles in same segment]

$\angle 1 = \angle 4 \dots$  (ii) (do)

(i) + (ii)

$$\angle 1 + \angle 2 = \angle 3 + \angle 4$$

$$\Rightarrow \frac{1}{2} \angle C + \frac{1}{2} \angle B = \angle D \quad \left[ \begin{array}{l} \text{CF bisects } \angle C \\ \text{BE bisects } \angle B \end{array} \right]$$

$$\Rightarrow \angle D = \frac{1}{2} (\angle B + \angle C)$$

$$\Rightarrow \angle D = \frac{1}{2} [180^\circ - \angle A]$$

$$\Rightarrow \angle D = 90^\circ - \frac{\angle A}{2}$$

Sim.  $\angle E = 90^\circ - \frac{\angle B}{2}$

$$\angle F = 90^\circ - \frac{\angle C}{2}$$