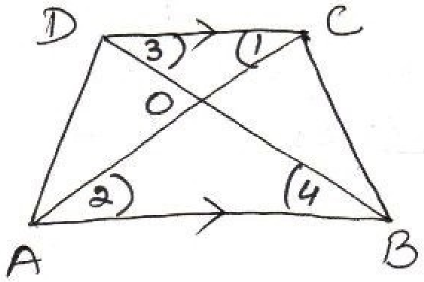
2 cont.

$\Delta ODC \sim \Delta OBA$

$\therefore \angle OCD = \angle OAB$

$55^\circ = \angle OAB$

(3)



to show $\frac{OA}{OC} = \frac{OB}{OD}$

proof $DC \parallel AB$

$\angle 1 = \angle 2$ (alternate in. $\angle$s)

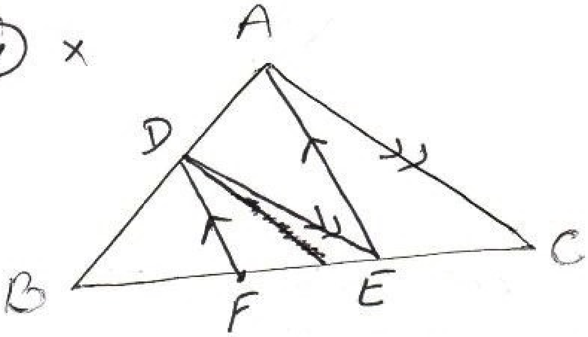
$\angle 3 = \angle 4$

$\therefore \Delta OCD \sim \Delta OAB$ by AA Similarity

$$\frac{OC}{OA} = \frac{OD}{OB}$$

$$\Rightarrow \frac{OA}{OC} = \frac{OB}{OD}$$

(4) x



to prove $\frac{BF}{FE} = \frac{BE}{EC}$

Proof In ΔABE, $DF \parallel AE$

$$\frac{BF}{FE} = \frac{BD}{DA} \quad \cdots (I)$$

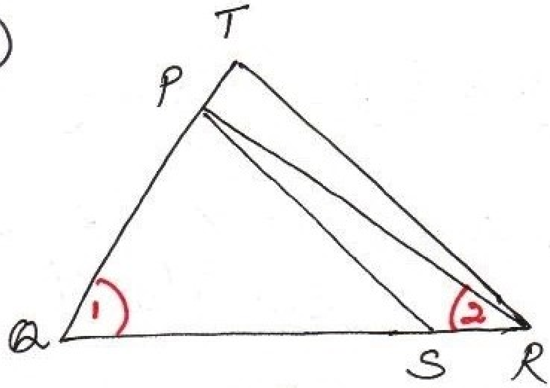
In ΔABC, $DE \parallel AC$

$$\frac{BD}{DA} = \frac{BE}{EC} \quad \cdots (II)$$

From (I), (II)

$$\frac{BF}{FE} = \frac{BE}{EC}$$

(4)



to show $\Delta PQS \sim \Delta TQR$

proof In ΔPQR

$\angle 1 = \angle 2$

$\Rightarrow PR = PQ$ (isosceles Δ prop.)

$$\frac{QR}{QS} = \frac{QT}{PR}$$

$$\Rightarrow \frac{QR}{QS} = \frac{QT}{PQ} \quad (\because PR = PQ)$$

and $\angle 1 = \angle 1$ (Common)

$\therefore \Delta TQR \sim \Delta PQS$ by SAS