6.3

Q1) (i) In $\triangle ABC$ and $\triangle PQR$

$\angle A = \angle P$

$\angle B = \angle Q$

$\angle C = \angle R$

$\therefore \triangle ABC \sim \triangle PQR$ [AAA criterion]

(ii) $\frac{BC}{PR} = \frac{2.5}{5} = \frac{1}{2}$

$\frac{AB}{QR} = \frac{2}{4} = \frac{1}{2}$

$\frac{AC}{PQ} = \frac{3}{6} = \frac{1}{2}$

$\therefore \triangle ABC \sim \triangle QRP$

[SSS criterion]

Q2) From the given figure,

$\angle DOC + 125° = 180°$ [linear pair]

$\Rightarrow \angle DOC = 180° - 125° = 55°$

$\angle DOC + \angle ODC + \angle DOC = 180°$

$\Rightarrow \angle DOC + 70° + 55° = 180°$

$\Rightarrow \angle DOC = 180° - 125° = 55°$.

Now, $\triangle ODC \sim \triangle OBA$

$\therefore \angle OAB = \angle OCD = 55°$.

Hence, $\angle DOC = 55°$, $\angle DCO = 55°$ and $\angle OAB = 55°$.

Q4) $\angle 1 = \angle 2$

$\therefore PQ = PR$

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

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

$\angle PQS = \angle TQR = \angle J$

$\therefore \Delta PQS \sim \Delta TQR.$

Q5) $\angle P = \angle RTS$

$\angle R = \angle R$

$\Delta RPQ \sim \Delta RTS.$

Q6) $\Delta ABE \cong \Delta ACD,$

$AB = AC.$

and $AE = AD$

$\therefore \frac{AB}{AC} = \frac{AD}{AE} = \frac{1}{1}.$

and $\angle DAE = \angle BAC$

$\therefore \Delta ADE \sim \Delta ABC.$