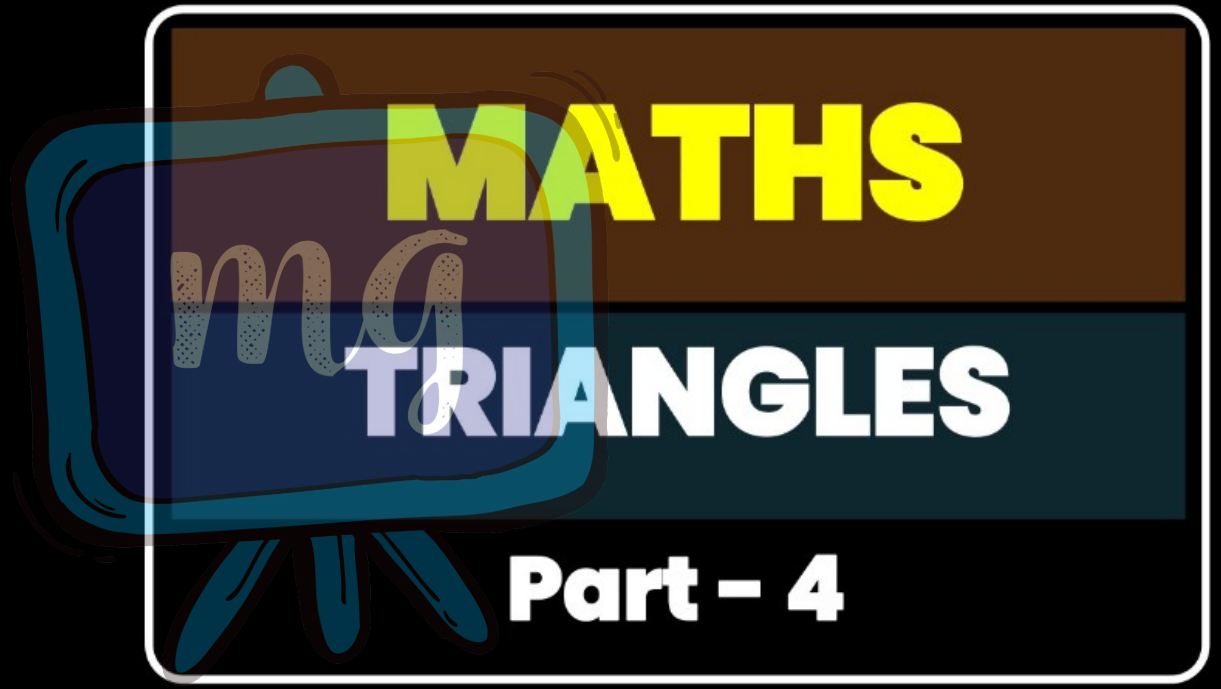
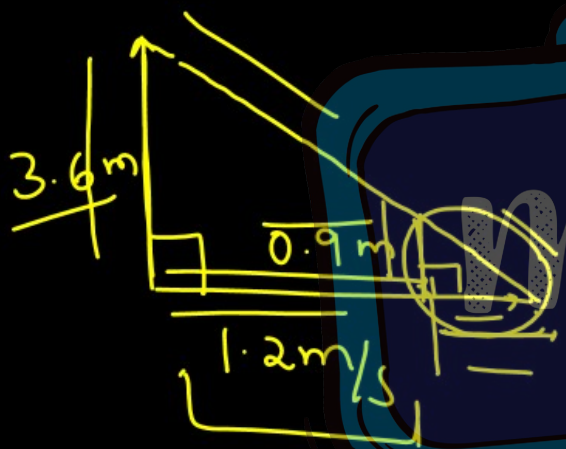
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Example : 7

A girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/s. If the lamp is 3.6 m above the ground, find the length of her shadow after 4 seconds.

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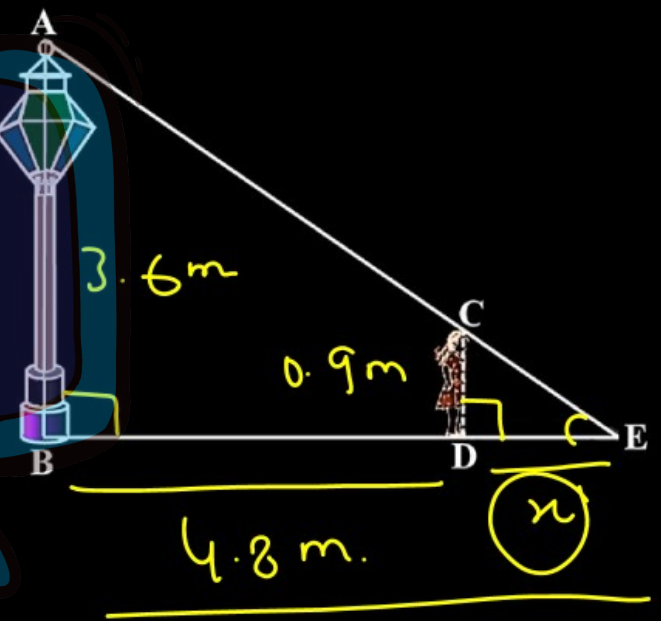
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In $\triangle EAB$ &
$\triangle ECD$.

$\angle EDC = \angle EBA$
$\angle E = \angle E$ (common)

A - A Similarity Rule.

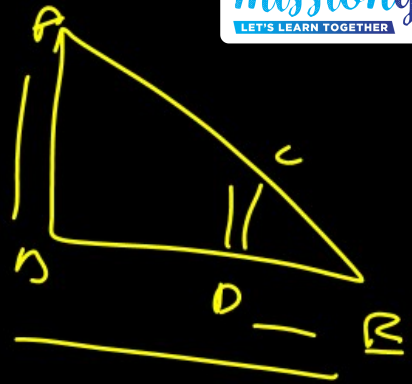
$\triangle EDC \sim \triangle EBA$



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$\triangle EDC \sim \triangle EBA$



$$\frac{ED}{EB} = \frac{DC}{AB}$$

$$\frac{x}{4.8+x} = \frac{0.9}{3.6} = \frac{1}{4}$$

$$4x = 4.8 + x$$

$$3x = 4.8$$

$$x = 1.6$$

So the length of the shadow is 1.6 m.

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Exercise : 6.3

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1. State which pairs of triangles in Fig. are similar. Write the similarity criterion used by you for answering the question and also write the pairs of similar triangles in the symbolic

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Exercise : 6.3

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(ii) $\frac{AB}{QR} = \frac{2}{4} = \frac{1}{2}$

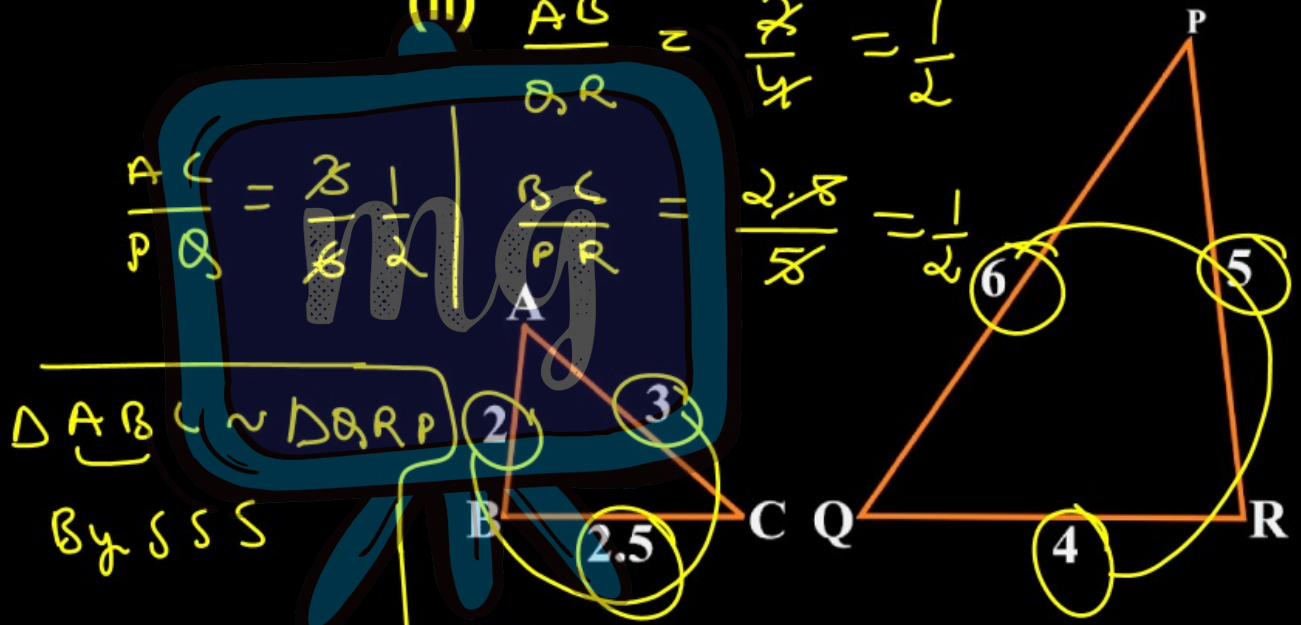
$\frac{AC}{PQ} = \frac{3}{6} = \frac{1}{2}$ | $\frac{BC}{PR} = \frac{2.5}{5} = \frac{1}{2}$

$\Delta ABC \sim \Delta QRP$

By SSS

Similarity Rule.

$\frac{AB}{QR} = \frac{BC}{PR} = \frac{AC}{PQ} = \frac{1}{2}$



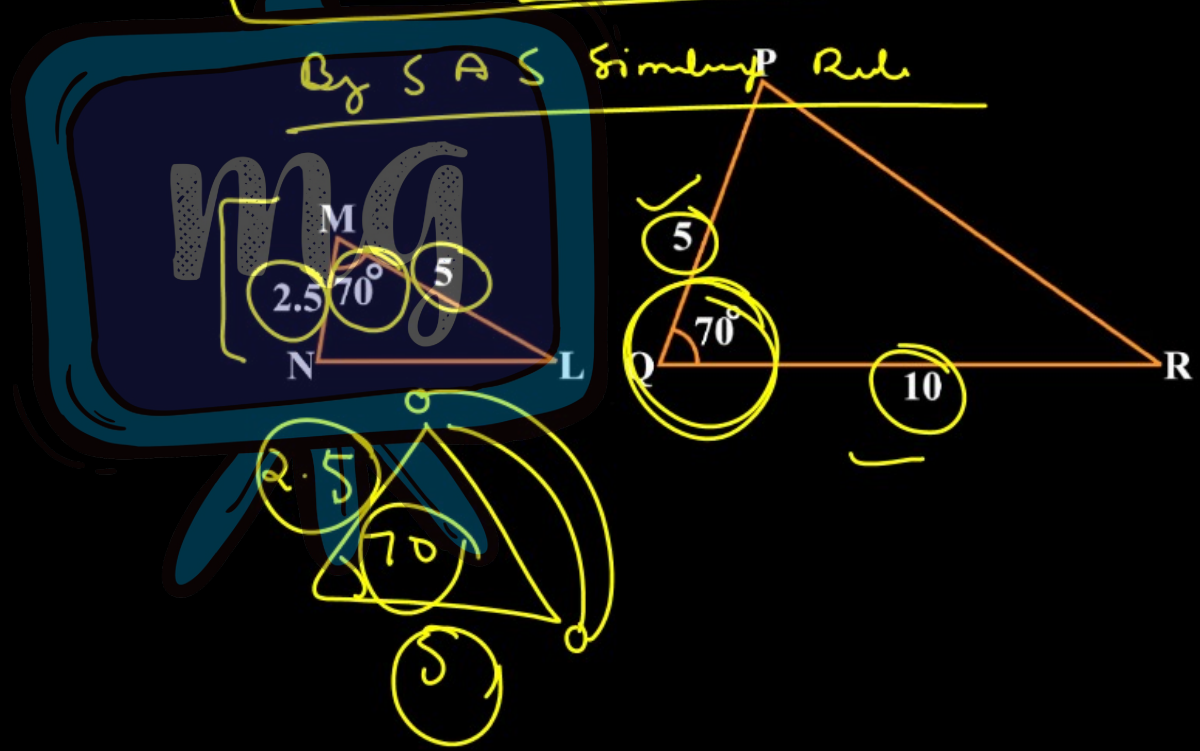
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Exercise : 6.3

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(iv) $\triangle PQR \sim \triangle NML$

By SAS Similarity Rule

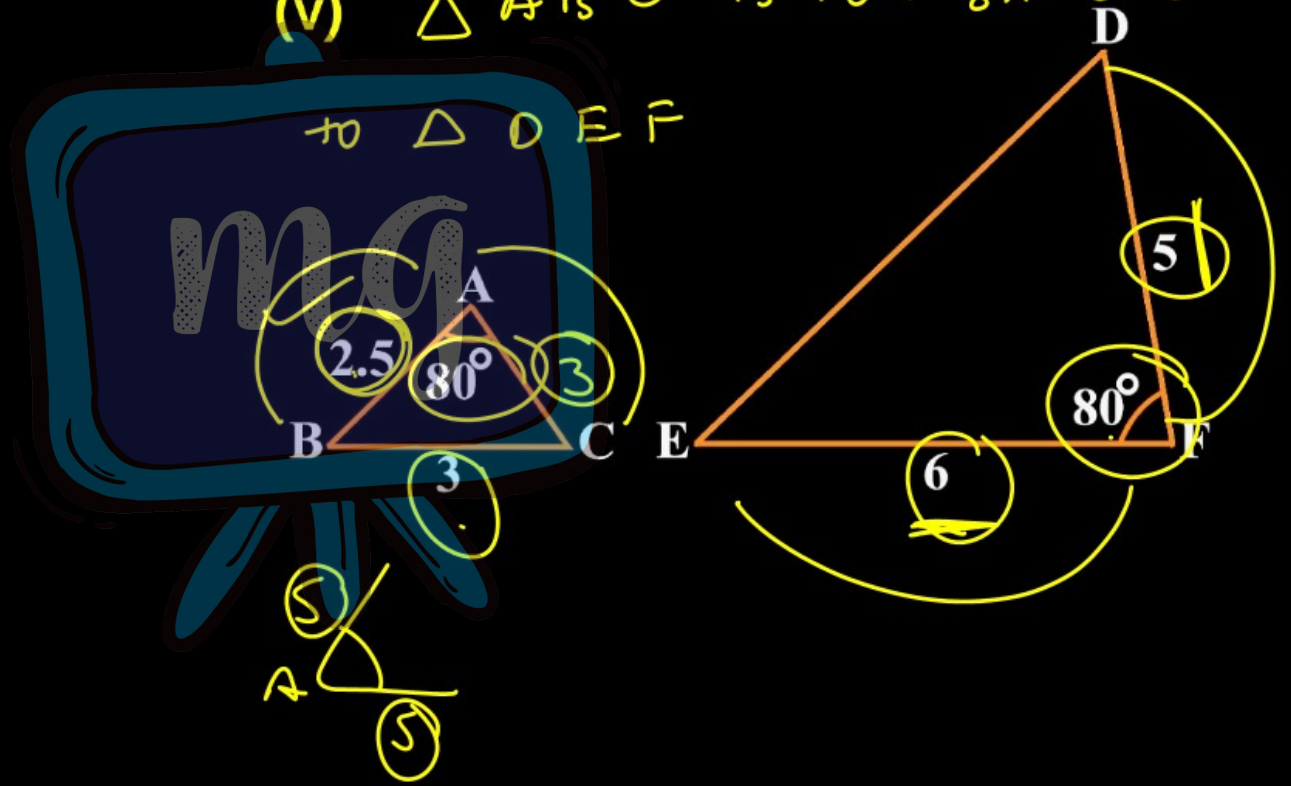


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(v) $\triangle ABC$ is not similar to $\triangle DEF$

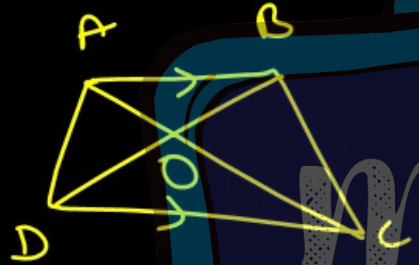


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3. Diagonals AC and BD of a trapezium ABCD with AB II DC intersect each other at the point O. Using a similarity criterion for two triangles, show that

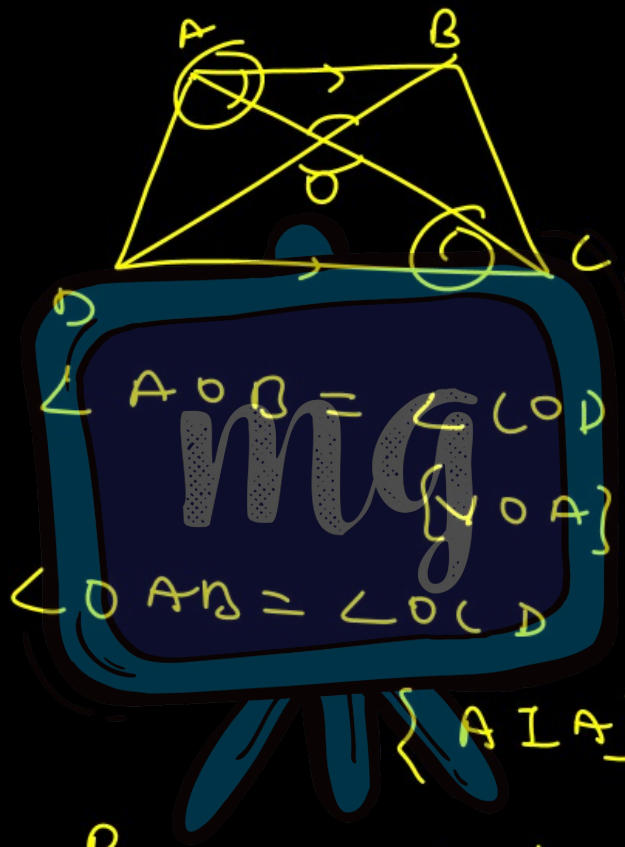


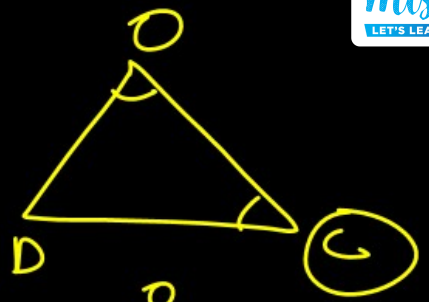
$$\frac{OA}{OC} = \frac{OB}{OD}$$

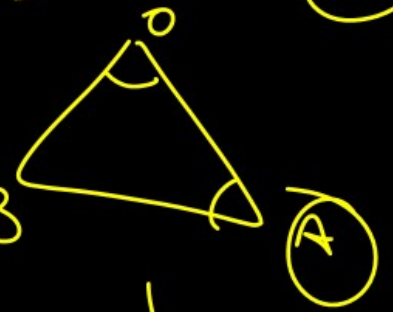


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By A-A Similarity Rule.

$\triangle OCD \sim \triangle OAB$

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

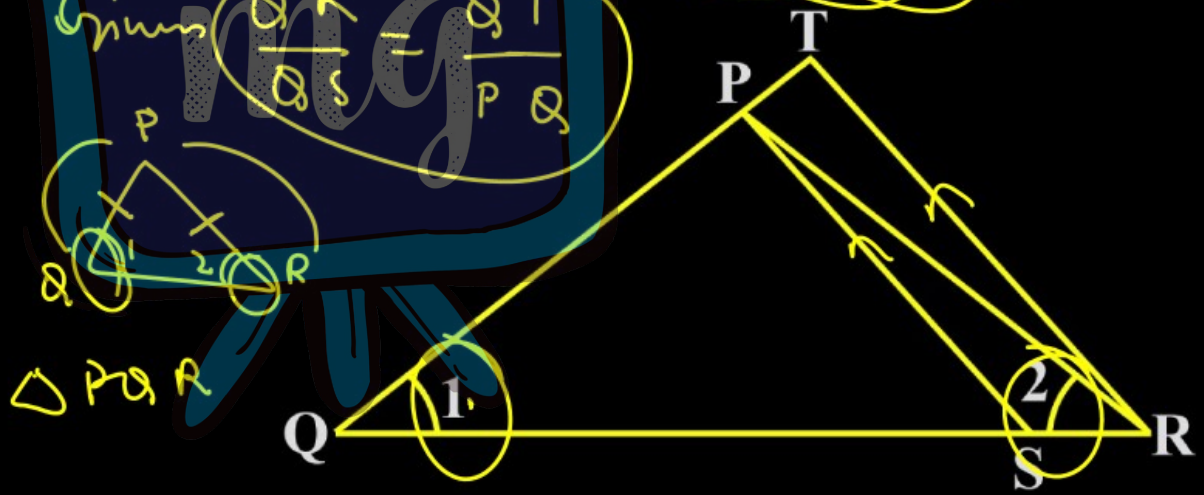
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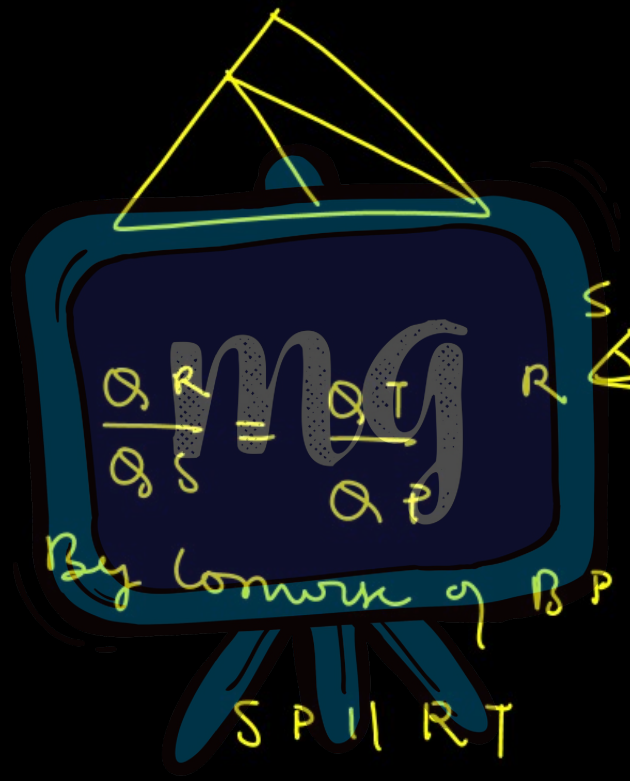
4. In fig., $\frac{QR}{QS} = \frac{QT}{PR}$ and $\angle 1 = \angle 2$.

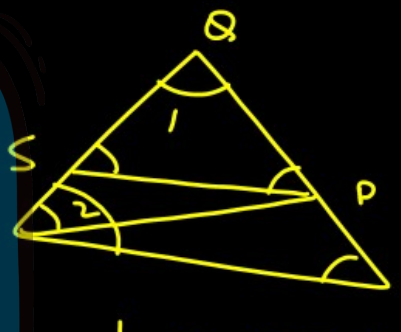
Show that $\Delta PQS \sim \Delta TQR$



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$\angle QSP = \angle QRT$

$\angle QPS = \angle QTR$

By AA Similarity Rule

$\triangle QSR \sim \triangle QRT$

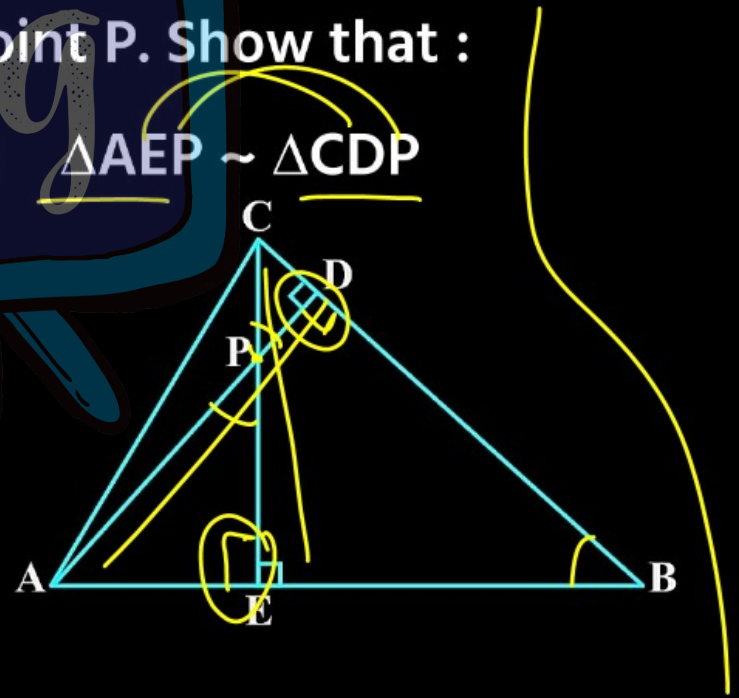
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Exercise : 6.3

7. In Fig., altitudes AD and CE of ΔABC intersect each other at the point P. Show that :

(i) $\Delta AEP \sim \Delta CDP$



In ΔAEP & ΔCDP

$\angle AEP = \angle CDP = 90°$

$\angle APE = \angle CPD$ {VOR}

By AA similarity Rule

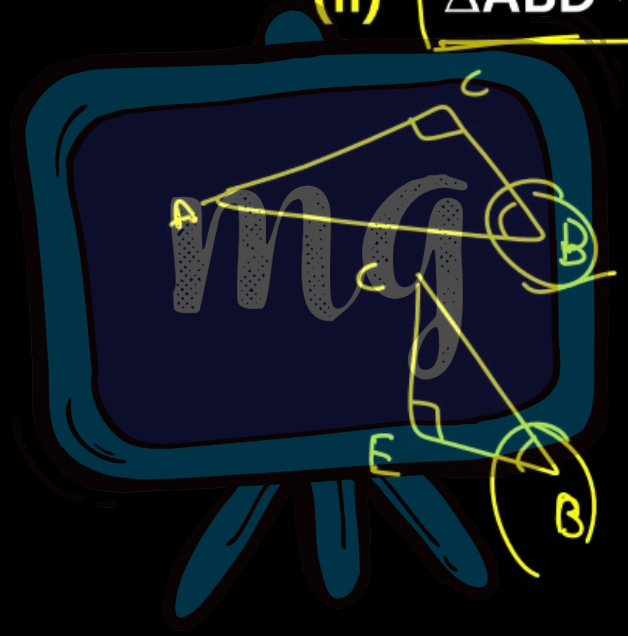
$\Delta AEP \sim \Delta CDP$

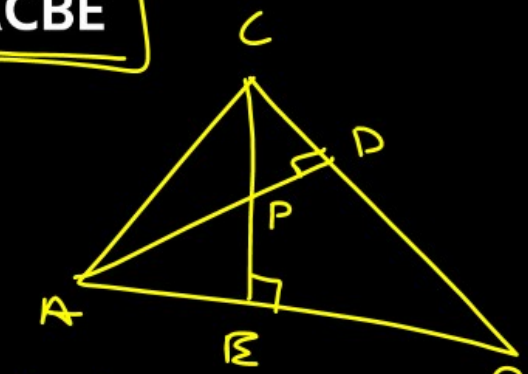
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(ii) $\Delta ABD \sim \Delta CBE$





$\angle CED = \angle ADB$

$\angle B = \angle B$ (common)

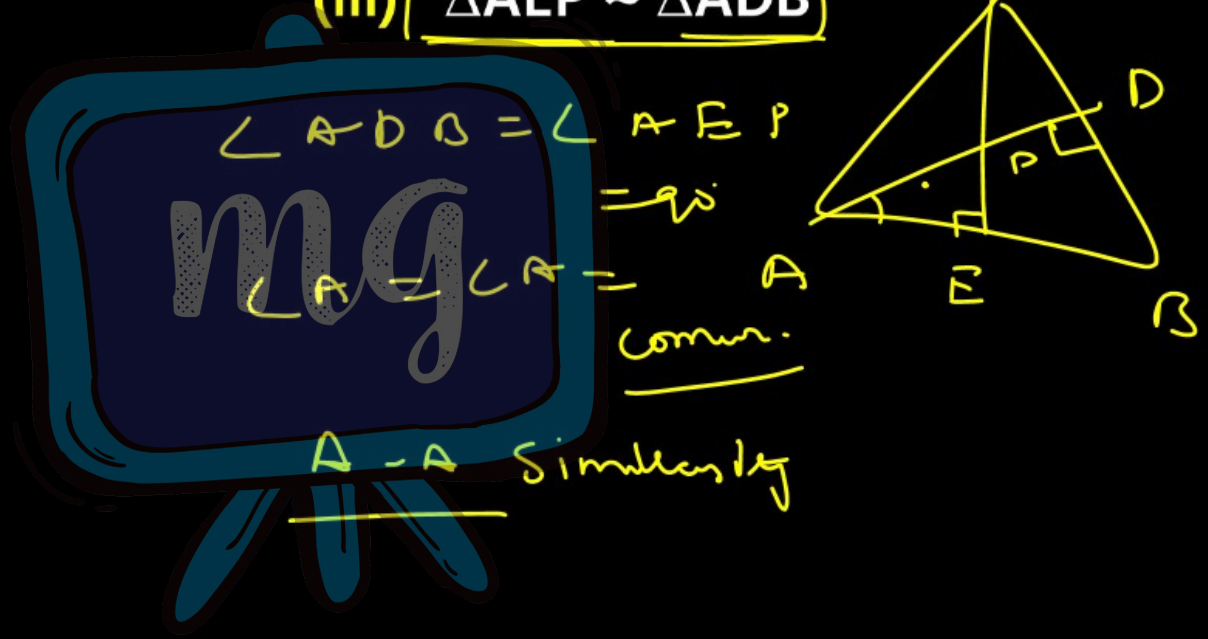
$\therefore$ A – A similarity rule.

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(iii) $\Delta AEP \sim \Delta ADB$



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(iv) $\Delta PDC \sim \Delta BEC$

