



UDAAN



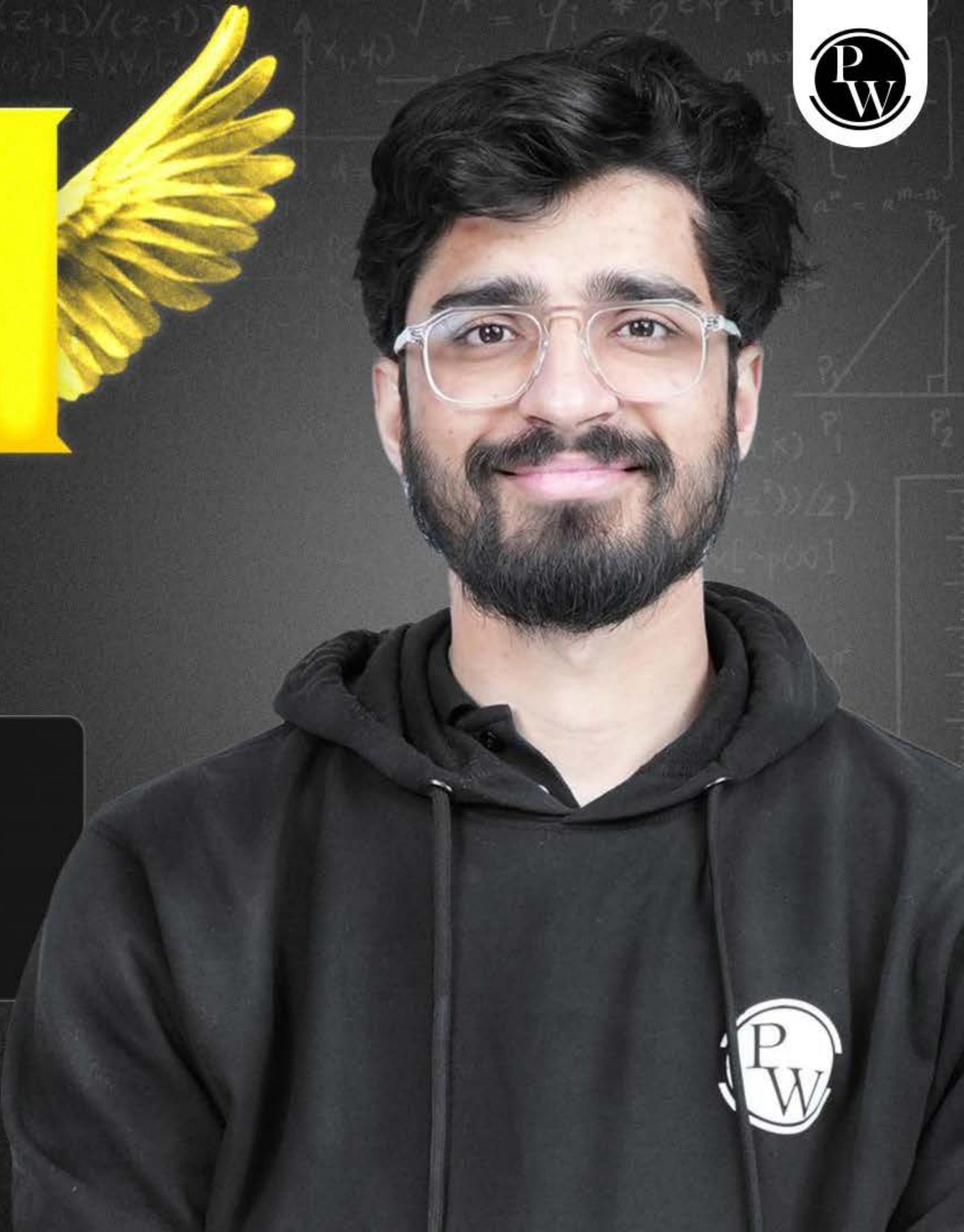
2026

Triangles

MATHS

LECTURE-6

BY-RITIK SIR



Topics

to be covered

A

Practice Questions

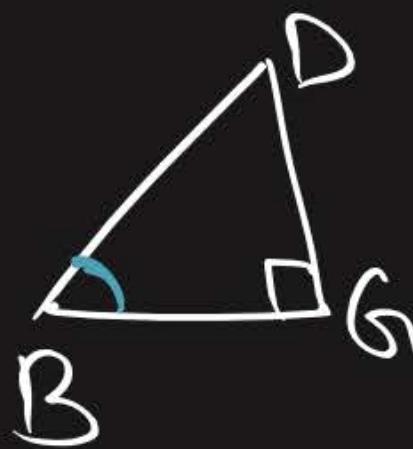
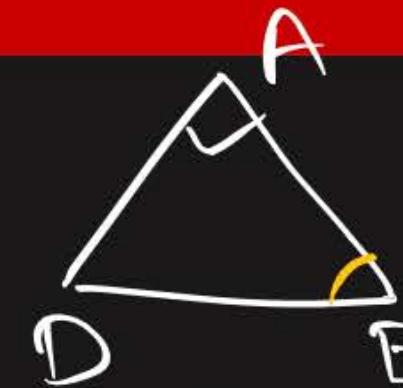
B

CBSE 2025 Questions

next class

#Q. In the given figure, DEFG is a square and $\angle BAC = 90^\circ$.

Show that $FG^2 = BG \times FC$.



(AA)

$\triangle ADE \sim \triangle GBD$

(1)

(AA)

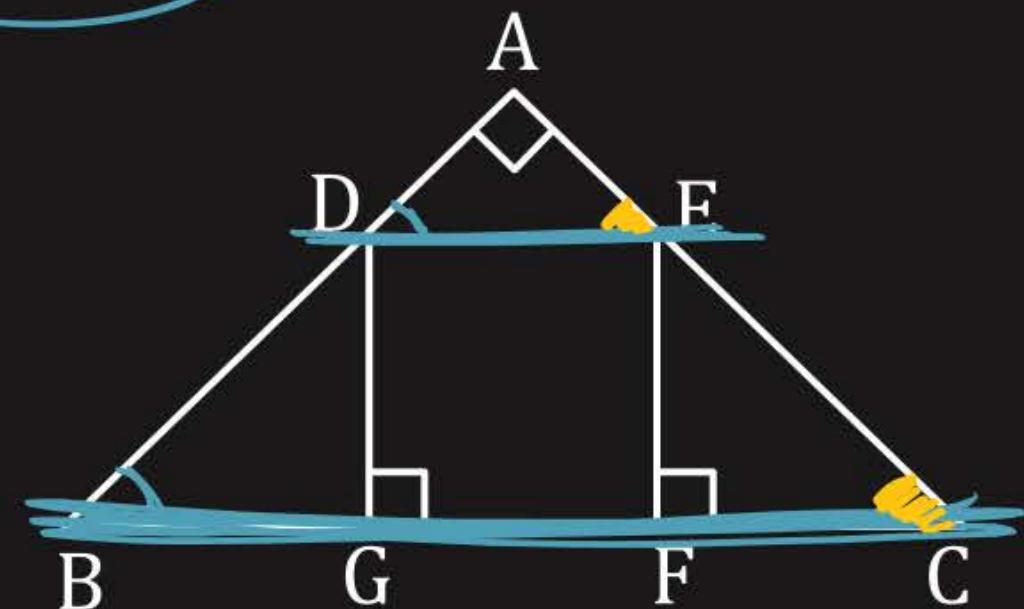
$\triangle ADE \sim \triangle FEC$

(2)

$DE \parallel BC$

\therefore

$DE \parallel GF$



From (1) and (2)

$\triangle GBD \sim \triangle FEC$

CPST,

$$\frac{GB}{FE} = \frac{BD}{EC}$$

$$\frac{GB}{FE} = \frac{GD}{FC}$$

$$GB \times FC = GF^2$$

#Q. In figure, $\triangle FEC \cong \triangle GDB$ and $\angle 1 = \angle 2$. Prove that $\triangle ADE \sim \triangle ABC$.

Given:

To prove:

Proof:

$$\therefore \triangle FEC \cong \triangle GDB$$

$$\Rightarrow FE = GD \times$$

$$EC = DB \checkmark$$

$$FC = GB \times$$

$$\angle F = \angle G \times$$

$$\angle E = \angle D \times$$

$$\angle C = \angle B \checkmark$$

$$\angle 4 = \angle 3 \checkmark$$

$$\angle 3 = \angle 4$$

$$AC = AB$$

$$\frac{1}{1} = \frac{AB}{AC}$$

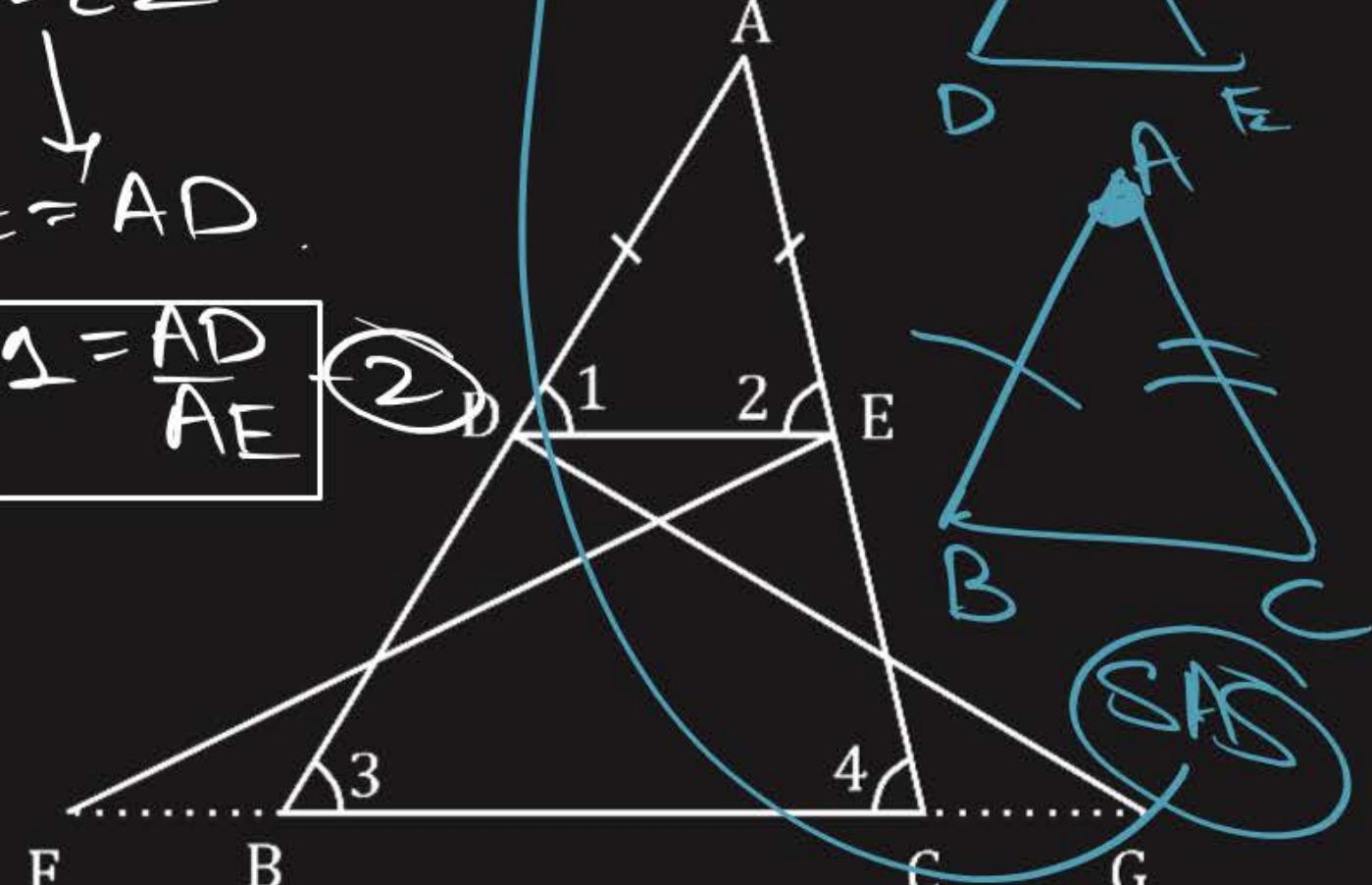
$$\frac{AB}{AC} = \frac{AD}{AE}$$

$$\frac{AB}{AD} = \frac{AC}{AE}$$

$$\angle 1 = \angle 2$$

$$AE = AD$$

$$\frac{1}{1} = \frac{AD}{AE}$$



#OT

#Q. In the given figure $\angle CEF = \angle CFE$. F is the midpoint of DC. Prove that $\frac{AB}{BD} = \frac{AE}{FD}$.

Given:

To prove:

Const: $D\bar{O}\parallel B\bar{E}$

Proof: In $\triangle ABE$

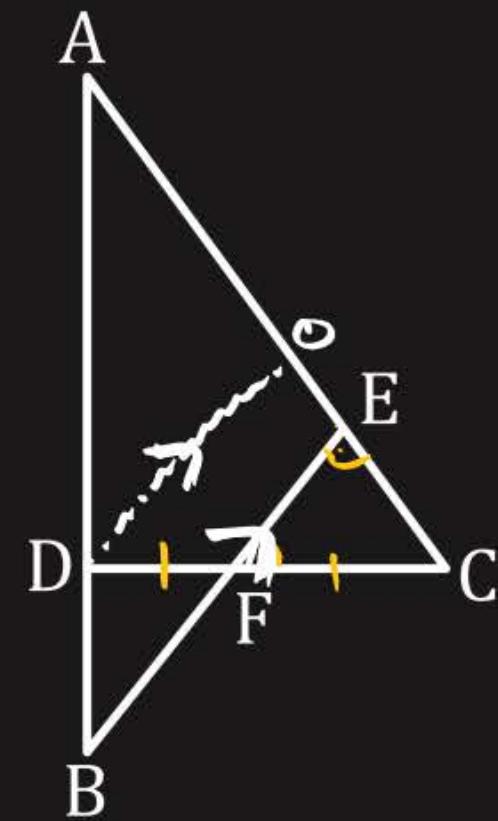
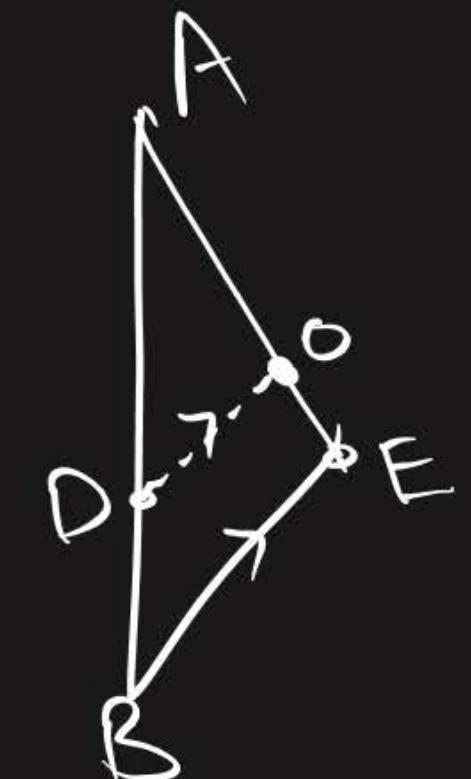
$$\text{By B.P.T, } \frac{AB}{DB} = \frac{AE}{OE}$$

$$EC = FC$$

$$DF = OE$$

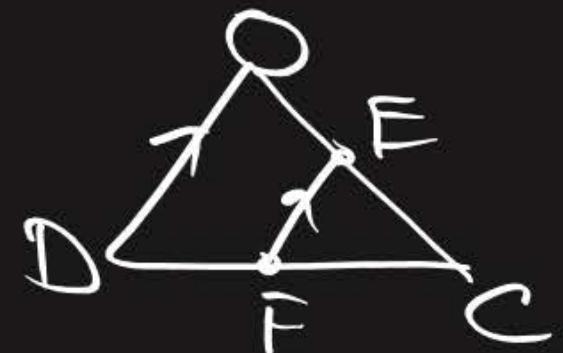
$$\Rightarrow \frac{AB}{DB} = \frac{AE}{DF}$$

H.P



also, In $\triangle ODC$, By B.P.T

$$\frac{DF}{FC} = \frac{OE}{EC}$$



#Q5

P
W

#Q. Through the mid-point M of the side CD of a parallelogram ABCD, the line BM is drawn intersecting AC in L and AD produced in E. Prove that $EL = 2BL$.

G:

TOP:

PROOF:

In $\triangle ALE$ and $\triangle DLC$

$$\angle 1 = \angle 2 \text{ (V.O.A)}$$

$$\angle 3 = \angle 4 \text{ (A.S.A)}$$

AA

 $\triangle ALE \sim \triangle DLC$

By (CPST)

$$\frac{AL}{CL} = \frac{EL}{BL} = \frac{AE}{CB}$$

In $\triangle DME$ and $\triangle DMC$

$$\angle S = \angle G$$

$$DM = MC$$

$$\angle DCM = \angle MDE$$

By ASA,

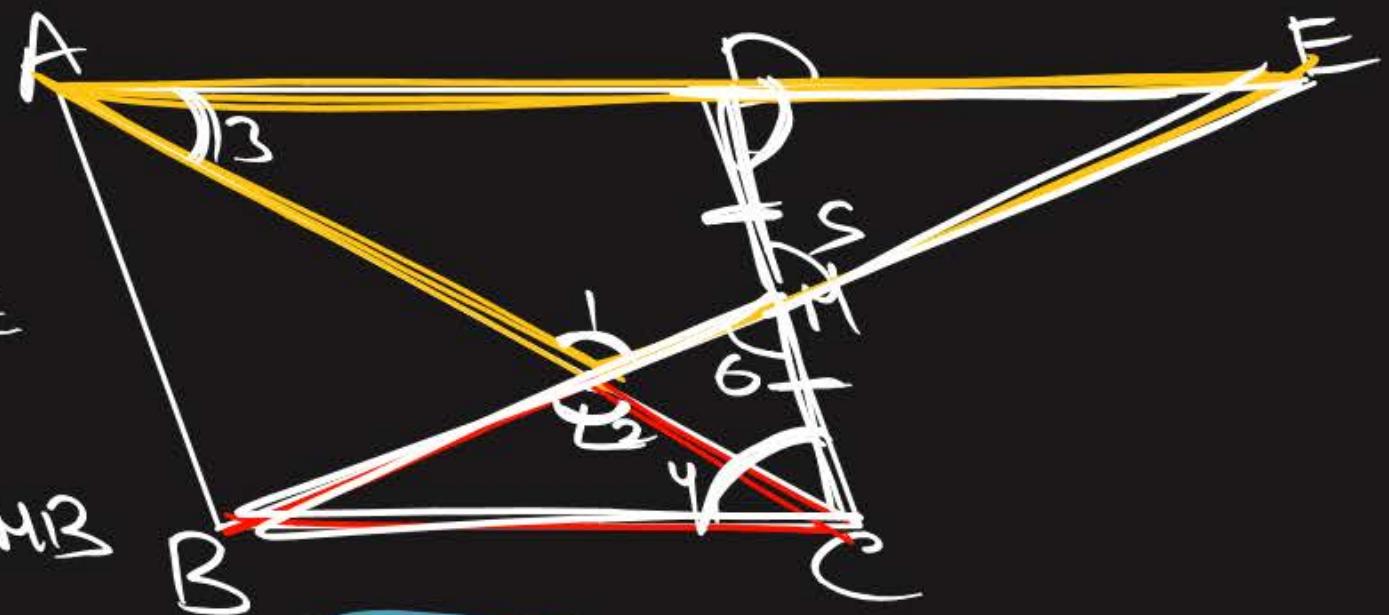
 $\triangle DME \cong \triangle DMC$

By (CPCT),

 $DE = BC$

$$AE = AD + DE$$

$$AE = BC + DC$$



$$AE = 2BC$$

$$\frac{EL}{BL} = \frac{2BC}{BC}$$

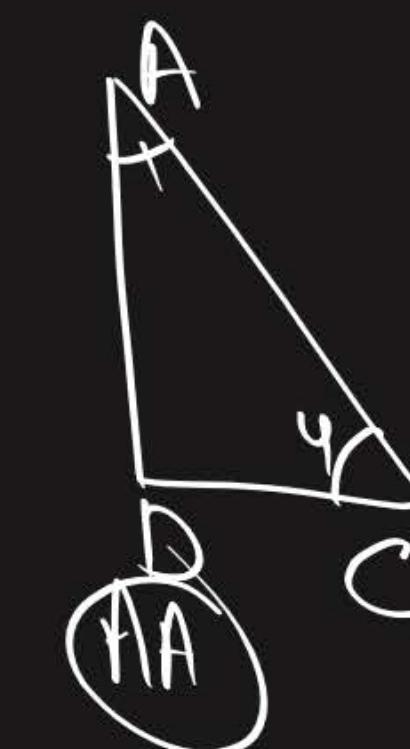
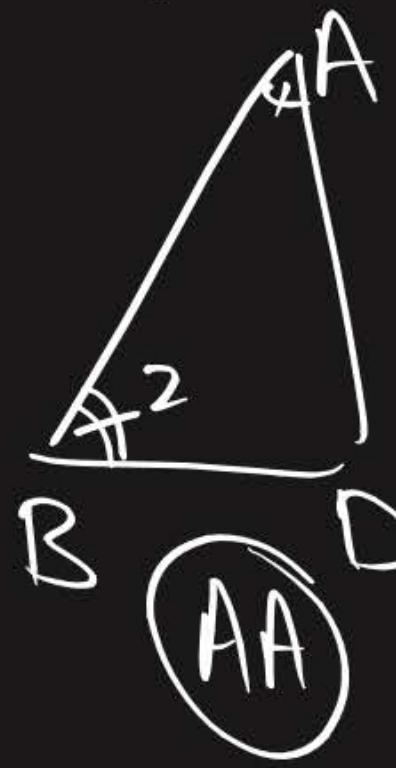
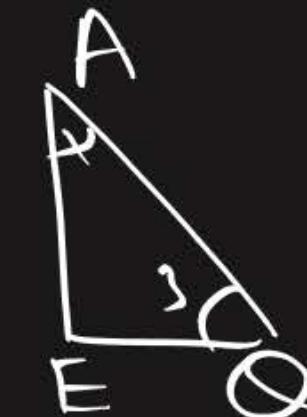
$$EL = 2BL \quad \text{H.P.}$$

#Q. In a $\triangle ABC$, let P and Q be points on AB and AC respectively such that $PQ \parallel BC$.
Prove that the median AD bisects PQ.

G: $PQ \parallel BC$, $BD = DC$.

Top: $PE = EO$

Proof:



$\triangle AEP \sim \triangle ADB$, $\triangle AEQ \sim \triangle ADC$.

$$\frac{AE}{AD} = \frac{EP}{DB} = \frac{AP}{AB}$$

①

$$\frac{AE}{AD} = \frac{EQ}{DC} = \frac{AO}{AC}$$

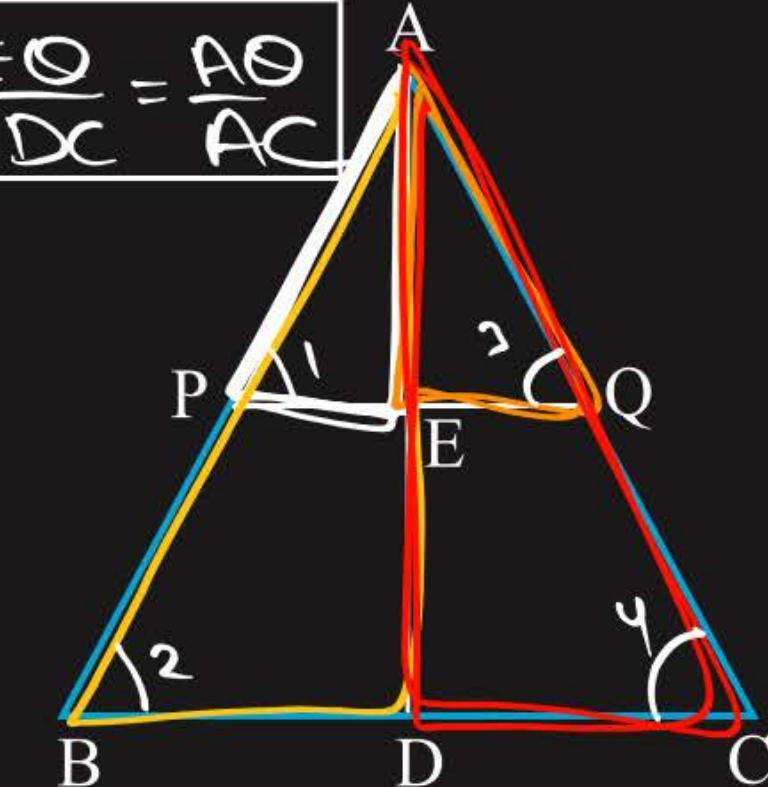
②

From ① and ②

$$\frac{PE}{DB} = \frac{EO}{DC}$$

$PE = EO$

H.P



#Q. In figure, $l \parallel m$ and line segments AB, CD and EF are concurrent at point P.

Prove that $\frac{AE}{BF} = \frac{AC}{BD} = \frac{CE}{FD}$.

$$\begin{array}{c} 1 \\ 2 \\ \text{AA} \end{array}$$

$$\begin{array}{c} 2 \\ 8 \\ \text{AA} \end{array}$$

$$\begin{array}{c} 5 \\ 6 \\ \text{AA} \end{array}$$

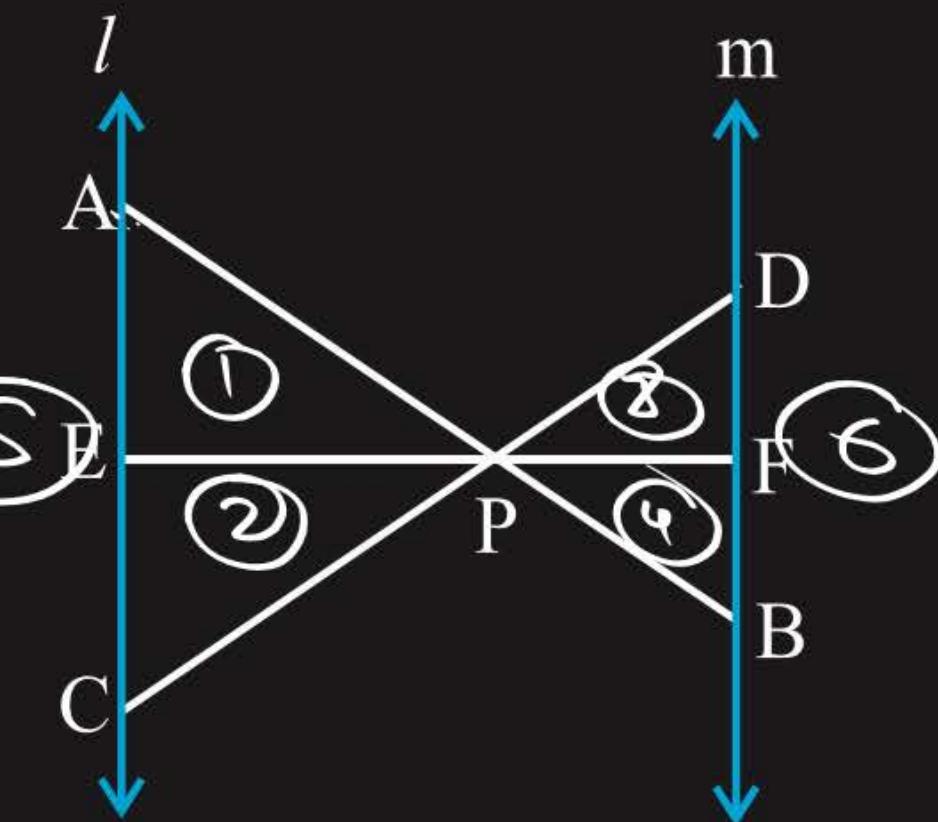
$\triangle APE \sim \triangle BPF$

$$\boxed{\frac{AP}{BP} = \frac{PE}{PF} = \frac{AE}{BF}}$$

$\triangle CEP \sim \triangle DFP, \triangle ACP \sim \triangle BDP$

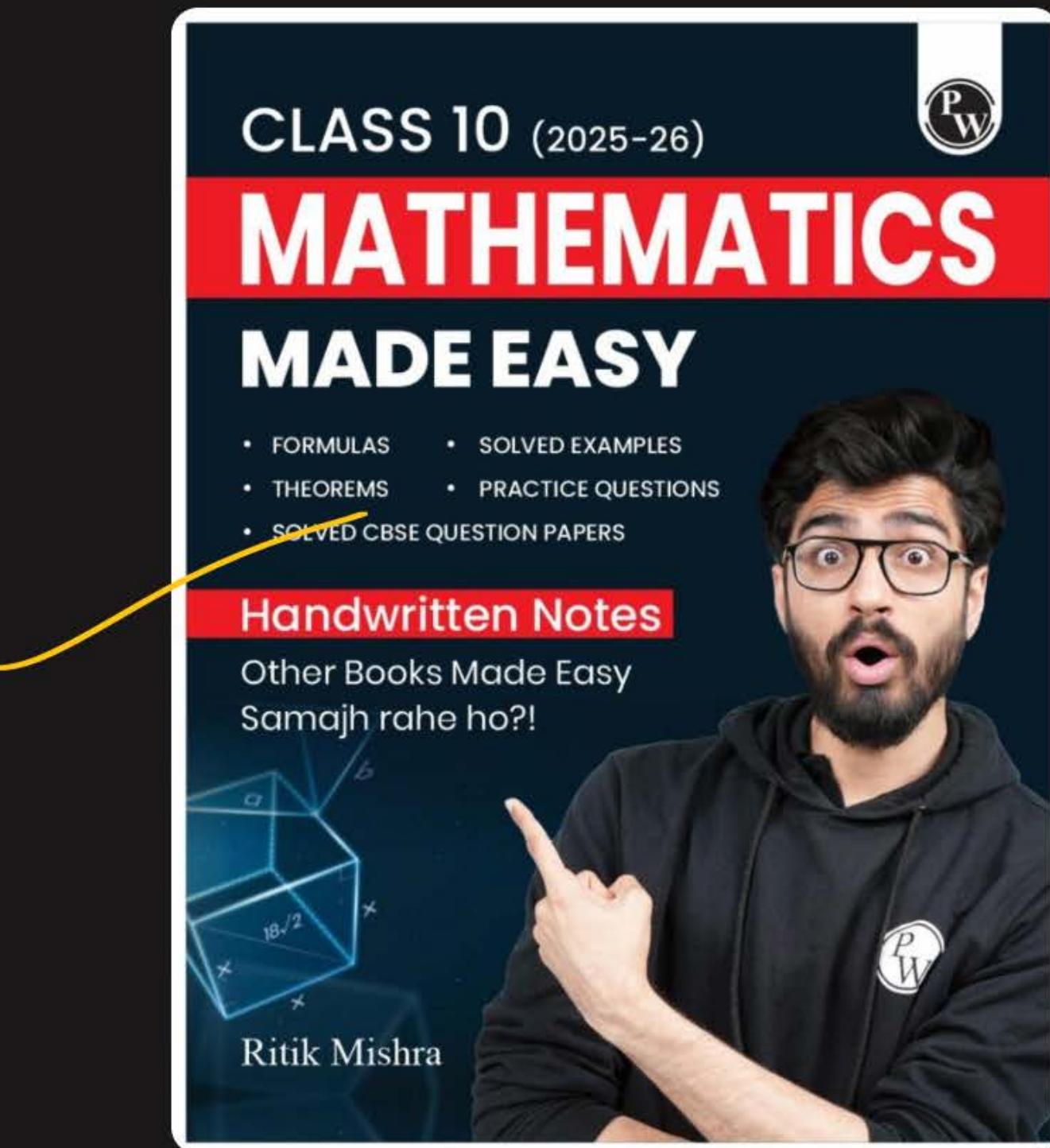
$$\boxed{\frac{CE}{DF} = \frac{EP}{FP} = \frac{CP}{DP}}$$

$$\boxed{\frac{AC}{BD} = \frac{CP}{DP} = \frac{AP}{BP}}$$



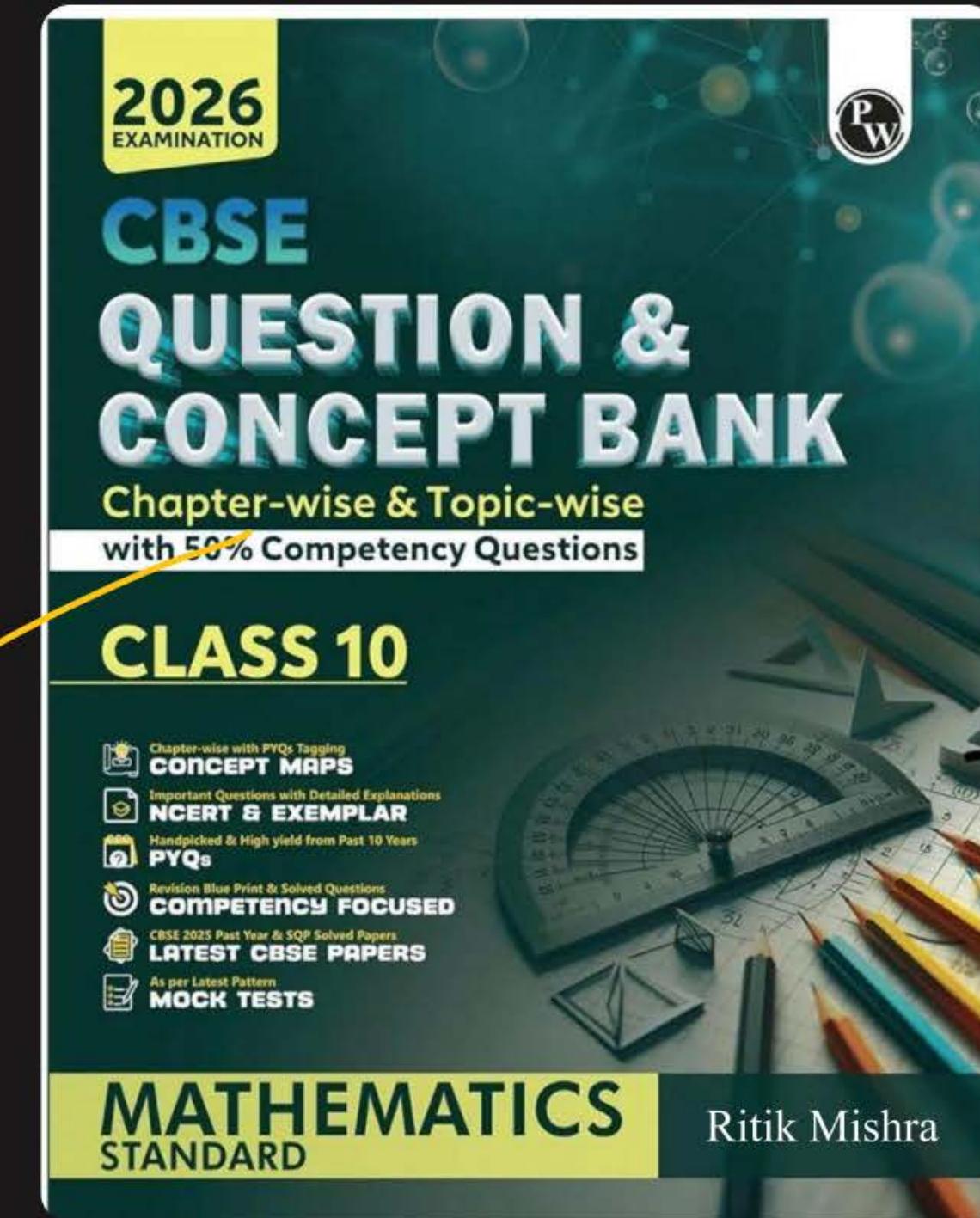
$$\frac{AE}{BF} = \frac{AC}{BD} = \frac{CE}{FD}$$

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**WORK HARD
DREAM BIG
NEVER GIVE UP**



RITIK SIR

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Thank You Babuaas ❤️👶



**Work Hard
Dream Big
Never Give Up**



Thank
You