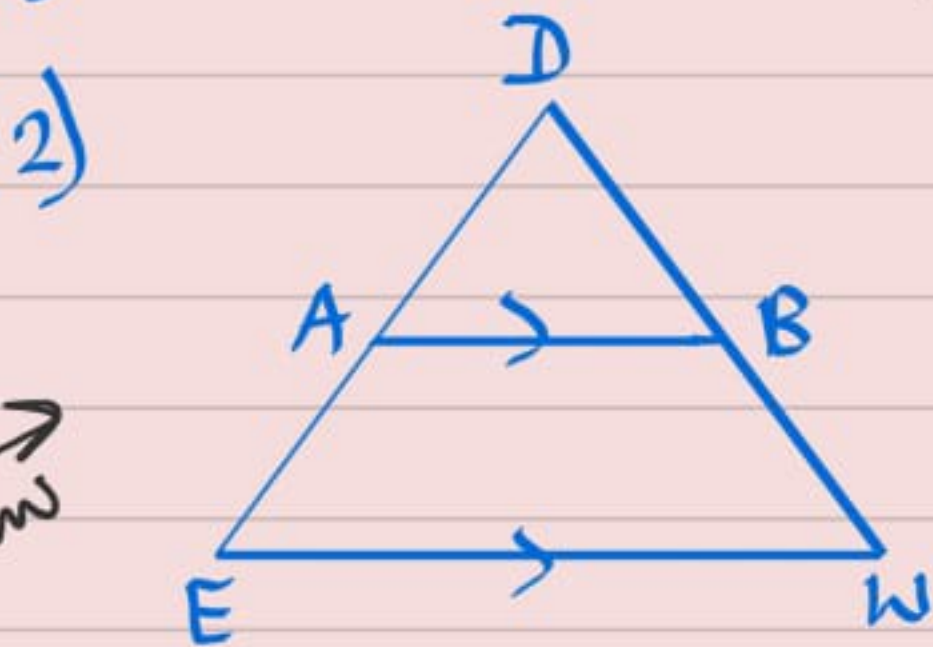


Test-10 (WhatsApp Test) PDF file only

③ 1) State Basic Proportionality Theorem.

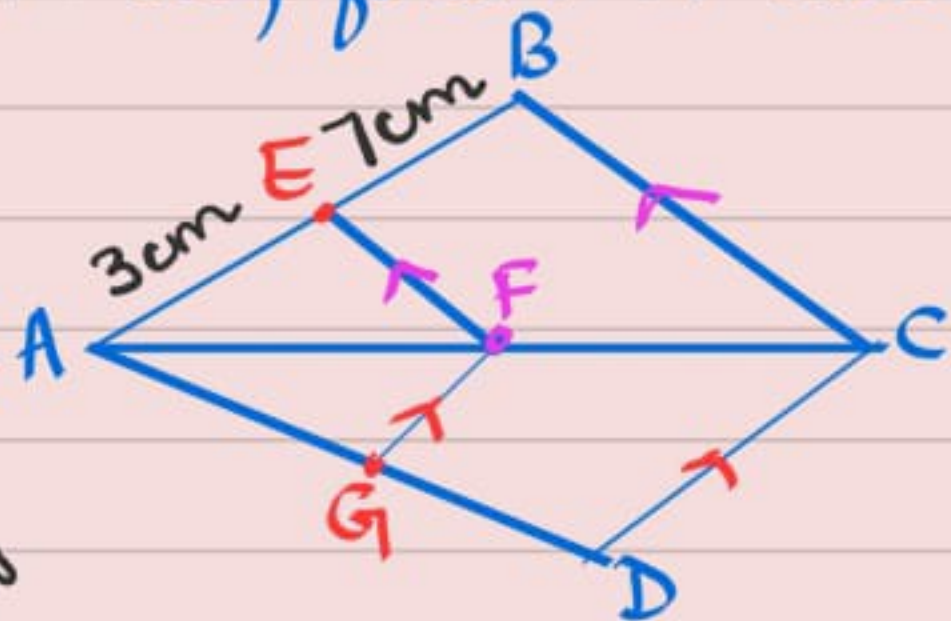


✓ Given:- in $\triangle DEW$,
A and B intersect sides
DE and DW such that
 $AB \parallel EW$

✓ To prove:- $\frac{DA}{AE} = \frac{DB}{BW}$

Hence, find the value of $\frac{AG}{GD}$ if $EF \parallel BC$ and $FG \parallel CD$

and $AE = 3\text{cm}$, $EB = 7\text{cm}$.



TEST-10

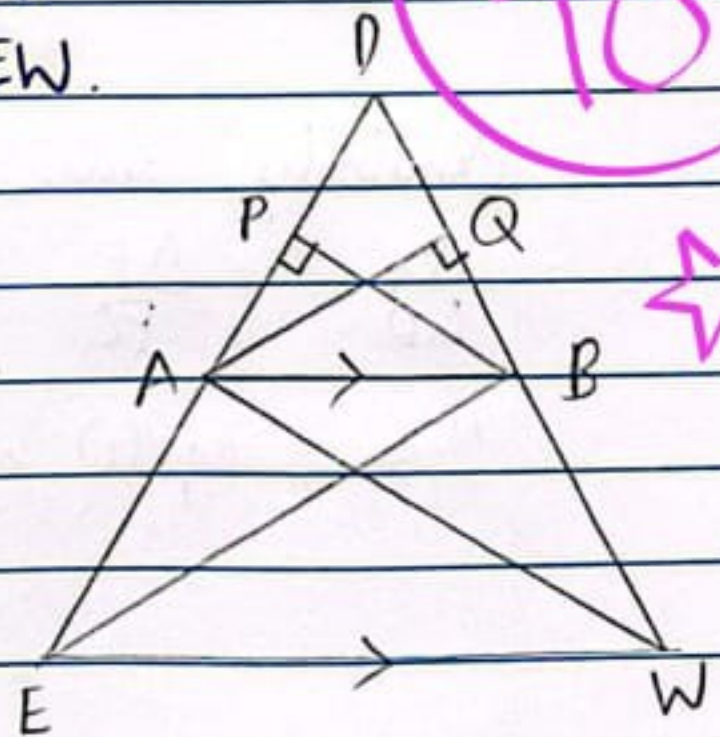
1. If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then the other two sides are divided in the same ratio.

2. GIVEN:- In $\triangle DEW$, A and B intersect sides DE and DW such that $AB \parallel EW$.

TO PROVE:- $\frac{DA}{AE} = \frac{DB}{BW}$

~~PROOF:-~~

CONSTRUCTION:- Draw $BP \perp DE$ and $AQ \perp DW$. Also join BE and AW.



PROOF:-

$$\frac{\text{area}(\triangle DAB)}{\text{area}(\triangle EAB)} = \frac{\frac{1}{2} \times AD \times BP}{\frac{1}{2} \times AE \times BP} = \frac{AD}{AE} \rightarrow (1)$$

$$\frac{\text{area}(\triangle DAB)}{\text{area}(\triangle BWA)} = \frac{\frac{1}{2} \times BD \times AQ}{\frac{1}{2} \times BW \times AQ} = \frac{BD}{BW} \rightarrow (2)$$

Since $\triangle EAB$ and $\triangle BWA$ lie on the same base AB and between same parallels AB and EW, then $\text{area}(\triangle EAB) = \text{area}(\triangle BWA) \rightarrow (3)$

From eq (1), (2) and (3), $\frac{DA}{AE} = \frac{DB}{BW}$

Hence proved

GIVEN:- $EF \parallel BC$, $FG \parallel CD$

$$AE = 3 \text{ cm}, EB = 7 \text{ cm}$$

Since $EF \parallel BC$, using Thales theorem,

$$\frac{AE}{EB} = \frac{AF}{FC} \rightarrow (1)$$

Similarly, since $FG \parallel CD$,

$$\frac{AG}{GD} = \frac{AF}{FC} \rightarrow (2)$$

From eq (1) and (2), $\frac{AE}{EB} = \frac{AG}{GD}$

$$\therefore \frac{AG}{GD} = \frac{3}{7}$$

