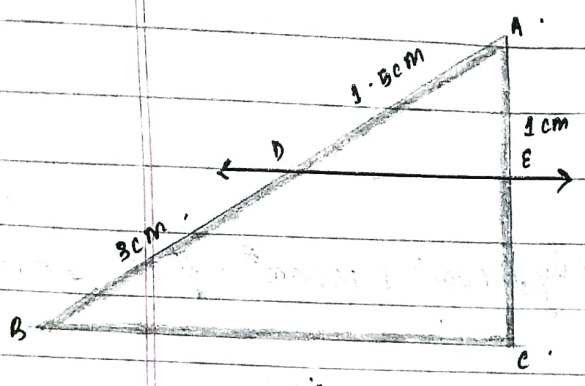
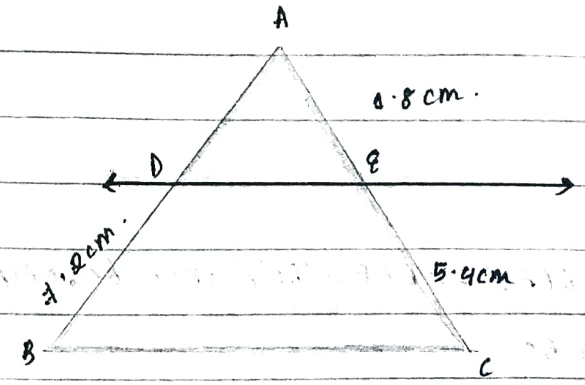
Exercise 6.2.

Q1. (i) & (ii) DE ∥ BC.
Find EC in (i) & AD in (ii).



(i)



(ii)

Ans: (i) In ΔABC, DE ∥ BC.

$\therefore \quad \frac{AD}{DB} = \frac{AE}{EC}$

or, $\frac{1.5}{3} = \frac{1}{EC}$

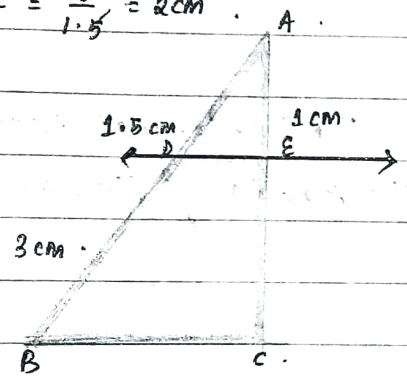
$\Rightarrow EC = \frac{3}{1.5} = 2cm$

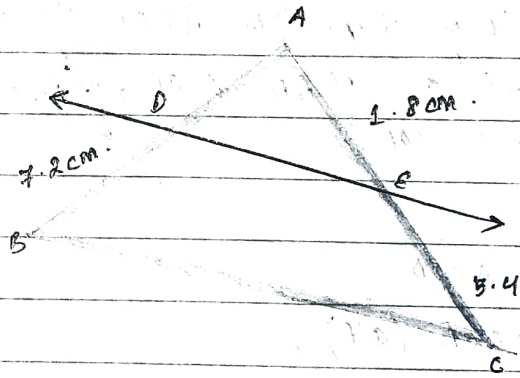
(ii) In ΔABC, DE ∥ BC.

$\frac{AD}{DB} = \frac{AE}{EC}$

or $\frac{AD}{7.2} = \frac{1.8}{5.4}$

$\Rightarrow AD = \frac{1.8 \times 7.2}{5.4} = 2.4cm.$





Q2. (i) $\frac{PE}{EQ} = \frac{3.9}{3} = \frac{1.3}{1}$.

and $\frac{PF}{FR} = \frac{3.6}{2.4} = \frac{3}{2} = \frac{1.5}{1}$.

Since $\frac{PE}{EQ} \neq \frac{PF}{FR}$, FR is not parallel to QR.

(ii) $\frac{PE}{EQ} = \frac{4}{4.5} = \frac{40}{45} = \frac{8}{9}$.

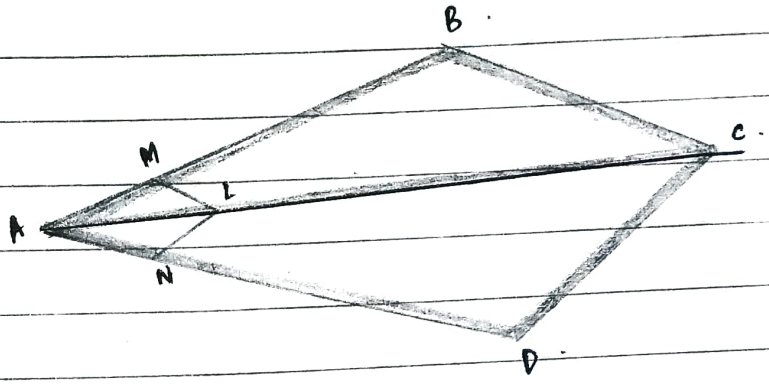
& $\frac{PF}{FR} = \frac{8}{9}$. $\therefore \frac{PE}{EQ} = \frac{PF}{FR}$, EF ∥ QR.

Q2 (iii) $\frac{PE}{EQ} = \frac{0.18}{1.28 - 0.18} = \frac{0.18}{1.10} = \frac{9}{55}$.

and $\frac{PF}{FR} = \frac{0.36}{2.56 - 0.36} = \frac{0.36}{2.20} = \frac{9}{55}$.

$\therefore \frac{PE}{EQ} = \frac{PF}{FR}$, $EF \parallel QR$.

Q3. Prove $\frac{AM}{AB} = \frac{AN}{AD}$.



In $\triangle ABC$, $LM \parallel CB$.

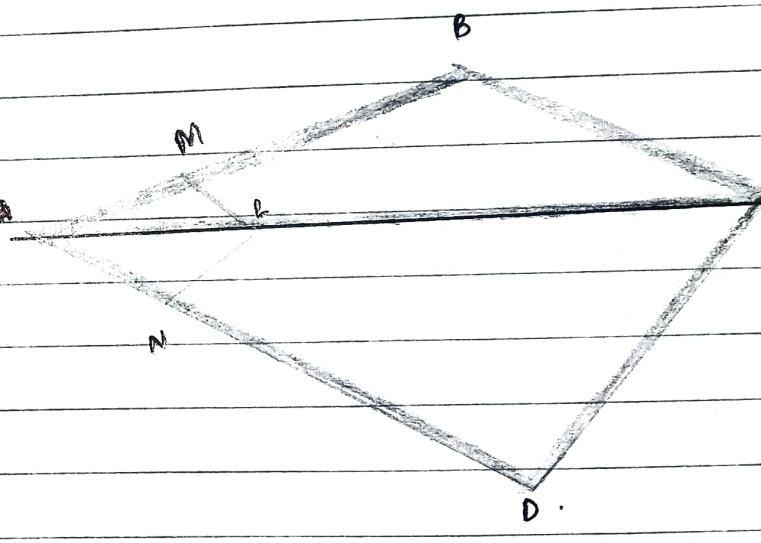
$\Rightarrow \frac{AM}{AB} = \frac{AL}{AC}$.

In $\triangle ADC$, $LN \parallel CD$.

$\Rightarrow \frac{AN}{AD} = \frac{AL}{AC}$.

(i) & (ii).

$\frac{AM}{AB} = \frac{AN}{AD}$.



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