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Ex - 6.2

Ans i) In $\triangle ABC$, $DE \parallel BC$

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

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

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

ii) In $\triangle ABC$, $DE \parallel BC$

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

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

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

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

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

and $\frac{PF}{FR} = \frac{8}{9}$

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

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

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

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

Ans3 - In $\triangle ABC$, $LM \parallel CB$

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

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

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

From eq (i) & (ii)

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