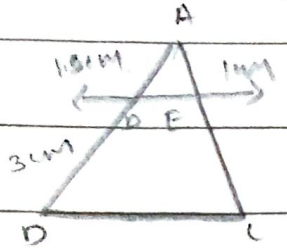
Exercise-6.2

17) i



Ans let EC = x cm

It is given that DE || BC

By using basic proportionality theorem we obtain.

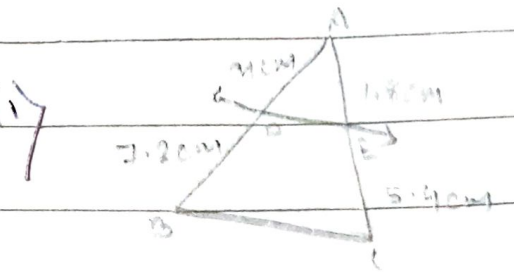
$\Rightarrow \frac{AD}{DB} = \frac{AE}{EC} \Rightarrow \frac{1.5}{3} = \frac{1}{x}$

$\Rightarrow x = \frac{3 \times 1}{1.5}$

$\Rightarrow x = 2$

EC = 2cm

ii)



Ans. let AD = x cm

It is given that DE || BC

by using basic proportionality theorem we obtain

$\Rightarrow \frac{AD}{DB} = \frac{AE}{EC} \Rightarrow \frac{x}{7.2} = \frac{1.8}{5.4}$

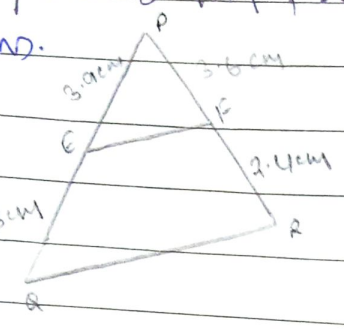
$\Rightarrow x = \frac{1.8 \times 7.2}{5.4}$

$\Rightarrow x = 2.4$

AD = 2.4cm

2) i) PE = 3.9cm, EQ = 3cm, FF = 3.6cm & FR = 2.4cm.

Ans.



Given,

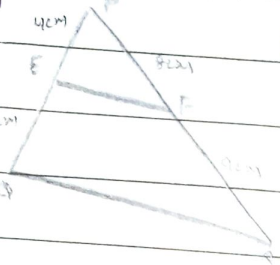
PE = 3.9cm PF = 3.6cm

EQ = 3cm FR = 2.4cm

$\Rightarrow \frac{PE}{EQ} = \frac{3.9}{3} = 1.3$ $\Rightarrow \frac{PF}{FR} = \frac{3.6}{2.4} = 1.5$

So. $\frac{PE}{EQ} \neq \frac{PF}{FR}$ ∴ Therefore EF is not parallel to QR

ii) PE = 4cm, QE = 4.5cm, PF = 8cm, RF = 9cm.



PE = 4cm, QE = 4.5cm, PF = 8cm, RF = 9cm

$\Rightarrow \frac{PE}{EQ} = \frac{4}{4.5} = \frac{8}{9}$ $\Rightarrow \frac{PF}{FR} = \frac{8}{9}$

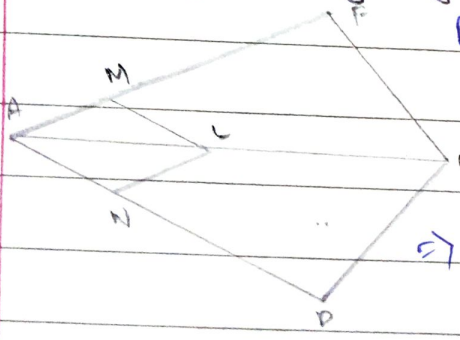
Hence $\frac{PE}{EQ} = \frac{PF}{FR}$ ∴ EF ∥ QR

iii) PQ = 1.28cm, PR = 2.56cm, PE = 0.18cm, PF = 0.36cm

Ans. $\Rightarrow \frac{PE}{PQ} = \frac{0.18}{1.28} = \frac{18}{128} = \frac{9}{64}$ $\Rightarrow \frac{PF}{PR} = \frac{0.36}{2.56} = \frac{9}{64}$

Hence $\frac{PE}{PQ} = \frac{PF}{PR}$ ∴ Therefore EF is parallel to QR

3) In the following figure If LM ∥ CB and LN ∥ CD prove that



And Given, LM ∥ CB

By using basic proportionality theorem we obtain

$\Rightarrow \frac{AM}{AB} = \frac{AL}{AC}$ — (i) ∵ Similarly LN ∥ CD

$\Rightarrow \frac{AN}{AD} = \frac{AL}{AC}$ (ii)

From (i) & (ii)

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