TRIANGLES

Ex- 6.1

1. i) similar
ii) similar
iii) equilateral
iv) a) equal
b) proportional

2. i) Similar figures : A pair of equilateral triangles of different side lengths, a pair of rectangles of different lengths and breadths.

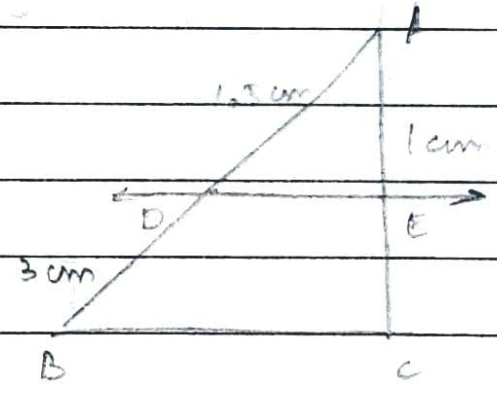
ii) Non-similar figures : a pair of rectangle and a parallelogram with angles not equal to 90°, a pair of scalene triangle and isosceles triangle.

3. No, the sides of quadrilateral PQRS and ABCD are proportional but their corresponding angles are not equal.
∴ There are not similar

Ex-6.2

1 i) In ΔABC, $DE \parallel BC$,

$\therefore \frac{AD}{DB} = \frac{AE}{EC}$ (By B.P.T)

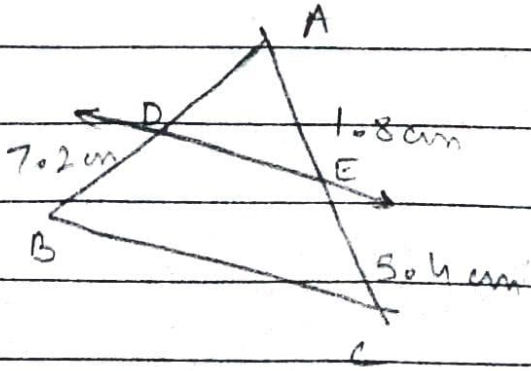


$\frac{1.5}{3} = \frac{1}{EC}$

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

ii) In ΔABC, $DE \parallel BC$

$\therefore \frac{AD}{DB} = \frac{AE}{EC}$ (By B.P.T)



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

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

2 ii) $\frac{PE}{EQ} = \frac{3.9}{3} = \frac{1.3}{1}$

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

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

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

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

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

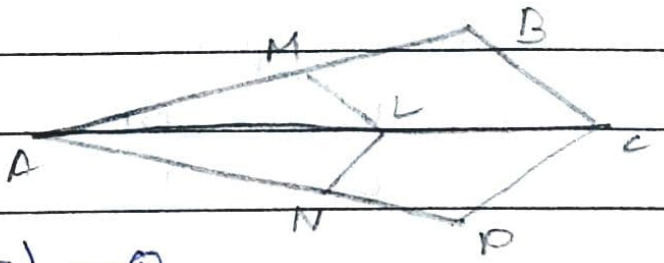
iii) $\frac{PE}{EQ} = \frac{0.18}{1.28 - 1.08} =$

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

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



$\Rightarrow \frac{AM}{AB} = \frac{AL}{AC}$ (By B.P.T) — (i)

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

$\Rightarrow \frac{AN}{AD} = \frac{AL}{AC}$ (By B.P.T) — (ii)

from (i) and (ii), we get,

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