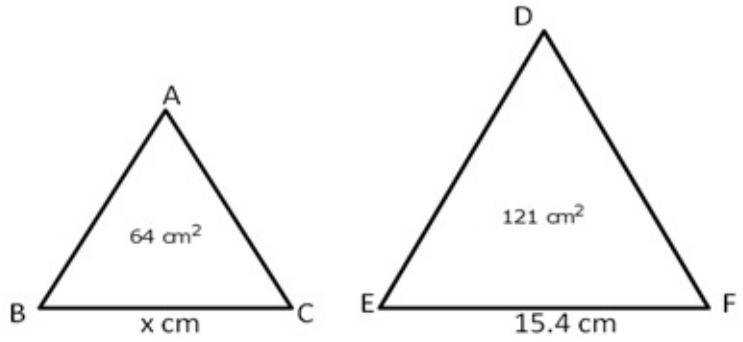
Exercise 4C

Question 1:
Given: ΔACB ~ ΔDEF,
area of ΔABC = 64cm^2 and area of ΔDEF = 121 cm^2



We know that the ratio of the area of two similar triangles is equal to the ratio of the squares of their corresponding sides.

$$\therefore \frac{ar(\Delta ABC)}{ar(\Delta DEF)} = \frac{BC^2}{EF^2}$$

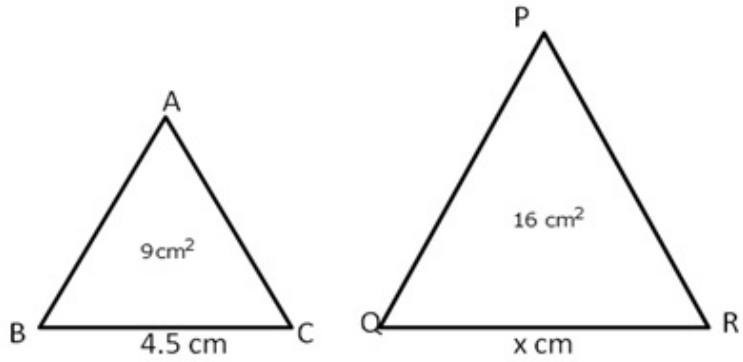
$$\Rightarrow \frac{64}{121} = \frac{x^2}{(15.4)^2} \text{ where } BC = x$$

$$x^2 = \frac{64}{121} \times (15.4)^2$$

$$x = \sqrt{\frac{64}{121} \times 15.4 \times 15.4} = \left(\frac{8}{11} \times 15.4\right) = 11.2 \text{ cm}$$

Hence, BC = 11.2 cm

Question 2:



Given: ΔABC ~ ΔPQR,
area of ΔABC = 9cm^2 and area of ΔPQR = 16cm^2.
We know that the ratio of the areas of two similar triangles is equal to the ratio of squares of their corresponding sides.

$$\therefore \frac{\text{area of } \Delta ABC}{\text{area of } \Delta PQR} = \frac{9}{16} = \frac{BC^2}{QR^2}$$

$$\Rightarrow \frac{9}{16} = \frac{(4.5)^2}{QR^2}$$

$$\Rightarrow QR^2 = (4.5)^2 \times \frac{16}{9}$$

$$\Rightarrow QR = \sqrt{(4.5)^2 \times \frac{16}{9}}$$

$$\Rightarrow QR = 4.5 \times \frac{4}{3} = 6 \text{ cm}$$

Hence, QR = 6 cm

********** END **********