Exercise 7A

Question 9:

Let a $= 13$ cm, B $= 13$ cm and $c = 20$ cm

Now, $$s = \frac{1}{2}(a+b+c)$$

$$= \left(\frac{13+13+20}{2}\right) \text{Cm} = \frac{46}{2} = 23\,\text{cm}$$

$\therefore$ area of the triangle $= \sqrt{s(s-a)(s-b)(s-c)}$

$$= \sqrt{23(23-13)(23-13)(23-20)}$$

$$= \sqrt{23\times10\times10\times3}$$

$$= 10\sqrt{69}$$

$$= 10\times8.306 = 83.06\ \text{cm}^2$$

$\therefore$ area of an isosceles triangle $= 83.06\ \text{cm}^2$

Question 10:

Let ΔABC be an isosceles triangle and Let $AL \perp BC$.

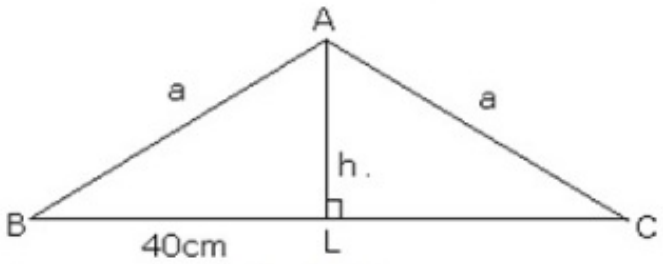
Given that BC $= 80$ cm and Area of $\Delta ABC = 360\ \text{cm}^2$

$\therefore$ $$\frac{1}{2}\times BC\times AL = 360\,\text{cm}^2$$

$\Rightarrow$ $$\frac{1}{2}\times80\times h = 360\ \text{cm}^2$$

$\Rightarrow$ $$40\times h = 360\,\text{cm}^2$$

$\Rightarrow$ $$h = \frac{360}{40} = 9\,\text{cm}$$



Now $$BL = \frac{1}{2}(BC)$$

$$= \left(\frac{1}{2}\times80\right)\text{cm} = 40\,\text{cm and AL} = 9\text{cm}$$

$$a = \sqrt{BL^2 + AL^2}$$

$$= \sqrt{(40)^2 + (9)^2} \Rightarrow \sqrt{1600+81}$$

$\Rightarrow$ $$\sqrt{1681} = 41\text{cm}$$

$\therefore$ Perimeter $= (41+41+80) = 162\,\text{cm}$

Perimeter of the triangle $= 162$ cm.

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