

Chapter 12

HERON'S FORMULA

Area of Triangle:

Example:

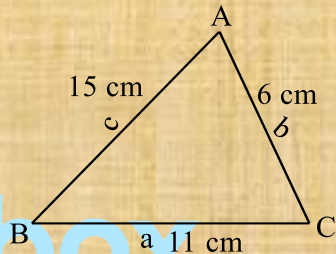
Find the Area of triangle whose sides are 11 cm, 6 cm, 15 cm.

Solution:

Here $BC = a = 11 \text{ cm}$

$CA = b = 6 \text{ cm}$

$AB = c = 15 \text{ cm}$



$$S = \frac{a+b+c}{2} = \frac{11+6+15}{2} = \frac{32}{2} = 16.$$

Now, $S - a = 16 - 11 = 5$

$$S - b = 16 - 6 = 10$$

$$S - c = 16 - 15 = 1$$

$$\text{Area of triangle} = \sqrt{S(S-a)(S-b)(S-c)}$$

$$= \sqrt{16 \times 5 \times 10 \times 15}$$

$$= \sqrt{16 \times 5 \times 5 \times 2 \times 3 \times 5}$$

$$= 4 \times 5 \sqrt{30}$$

$$\therefore \text{Area of triangle} = 20\sqrt{30} \text{ sq. c.m.}$$