Herons Formula Ex 12.1 Q1

Answer :

Whenever we are given the measurement of all sides of a triangle, we basically look for Heron's formula to find out the area of the triangle.

If we denote area of the triangle by A, then the area of a triangle having sides a, b, c and s as semi-perimeter is given by;

$$A=\sqrt{s(s-a)(s-b)(s-c)}$$

Where, $s=\frac{a+b+c}{2}$

We are given:

a =150 cm

b=120 cm

c =200 cm

Here we will calculate s,

$$s=\frac{a+b+c}{2}$$

$$s=\frac{150+120+200}{2}$$

$$s=\frac{470}{2}$$

$$s=235 \text{ cm}$$

So the area of the triangle is:

$$A=\sqrt{235(235-150)(235-120)(235-200)}$$

$$A=\sqrt{235(85)(115)(35)}$$

$$A=\sqrt{80399375}$$

$$\boxed{A=8966.56 \text{ cm}^2}$$

Herons Formula Ex 12.1 Q2

Answer :

Whenever we are given the measurement of all sides of a triangle, we basically look for Heron's formula to find out the area of the triangle.

If we denote area of the triangle by A, then the area of a triangle having sides a, b, c and s as semi-perimeter is given by;

$$A=\sqrt{s(s-a)(s-b)(s-c)}$$

Where, $s=\frac{a+b+c}{2}$

We are given:

a = 9 cm, b = 12 cm, c = 15 cm

Here we will calculate s,

$$s=\frac{a+b+c}{2}$$

$$s=\frac{9+12+15}{2}$$

$$s=\frac{36}{2}$$

$$s=18 \text{ cm}$$

So the area of the triangle is:

$$A = \sqrt{18(18-9)(18-12)(18-15)}$$

$$A = \sqrt{18(9)(6)(3)}$$

$$A = \sqrt{2916}$$

$$\boxed{A = 54\ \text{cm}^2}$$

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