

Heron's Formula

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Heron's formula is a formula that can be used to find the area of a triangle, when given its three side lengths. It can be applied to any shape of triangle, as long as we know its three side lengths.

Area of triangle:-

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$$

i) For a right angle triangle the two sides containing the right angle are called the base (BC) and height (AB) of the triangle.

ii) For an equilateral triangle, any of the three sides is the base and the perpendicular to the base from the opposite vertex is the height of the triangle.

iii) For an isosceles triangle, the side which is unequal is the base and the perpendicular to it from the opposite vertex is the height of the triangle.

Area of a triangle using Heron's Formula:-

- Area of a triangle = $\sqrt{s(s-a)(s-b)(s-c)}$
- a, b, c are the sides of the triangle
- $[s = (a + b + c)/2]$ is the semi-perimeter of the triangle.