Heron's Formula

Heron's formula is used to calculate the area of a triangle when the lengths of all three sides are known. The formula is:

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

Where:

- a, b, c are the lengths of the sides of the triangle.
- s is the semi-perimeter of the triangle, calculated as:

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

Steps:

1. Calculate the semi-perimeter (s).
2. Substitute s, a, b, and c into the formula.
3. Simplify and solve to find the area.