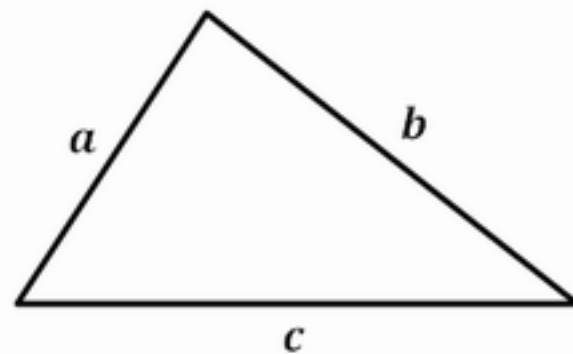


### Area of a Triangle

(Solve Using Every Side)

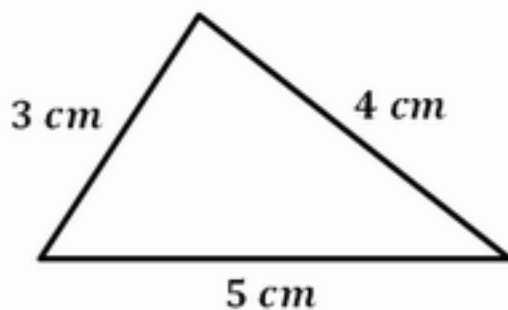


$$Area = \sqrt{s(s-a)(s-b)(s-c)}$$

$a, b, c = \text{sides of the triangle}$

$$s \text{ (semi-perimeter)} = \frac{a + b + c}{2}$$

### Example:



#### Semi-perimeter

$$\begin{aligned} s &= \frac{a + b + c}{2} \\ &= \frac{3 + 4 + 5}{2} \\ &= \frac{12}{2} \\ &= 6 \end{aligned}$$

#### Area of the Triangle

$$\begin{aligned} A &= \sqrt{s(s-a)(s-b)(s-c)} \\ &= \sqrt{6(6-3)(6-4)(6-5)} \\ &= \sqrt{6 \times 3 \times 2 \times 1} \\ &= \sqrt{36} \\ &= 6 \text{ cm}^2 \end{aligned}$$