

# Pythagorean Theorem:

$$a^2 + b^2 = c^2$$

## Hypotenuse Formula:

$$c = \sqrt{a^2 + b^2}$$

## Leg Formula:

$$a = \sqrt{c^2 - b^2}$$

## Special Right Triangles

**45-45-90 triangle (hint: 2 different sides)**

$$\text{hypotenuse} = \text{leg} \cdot \sqrt{2}$$

$$\text{leg} = \text{hypotenuse} / \sqrt{2}$$

**30-60-90 triangle (hint: 3 different sides)**

$$\text{hypotenuse} = \text{short leg} \cdot 2$$

$$\text{long leg} = \text{short leg} \cdot \sqrt{3}$$

$$\text{short leg} = \text{long leg} / \sqrt{3}$$

$$\text{short leg} = \text{hypotenuse} / 2$$

### Examples:

