

Chapter 8 – Right Triangles Methods Checklist

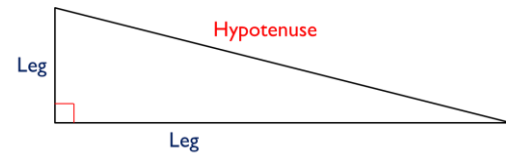
There are 3 Methods we have used in this chapter to solve for measurements in Right Triangles. Each one has its own conditions that need to be met in order for you to use them. Here is a list of each method, along with its requirements, so you can study for the test.

Method #1: The Pythagorean Theorem

Equation: $Hyp^2 = Leg^2 + Leg^2$

Requirements: A right triangle, and 2 side lengths given (Leg/Leg or Leg/Hypotenuse)

Desired Answered: The missing side length (Hypotenuse or the other Leg)



Method # 2: Special Right Triangles (45° – 45° – 90° and 30° – 60° – 90°)

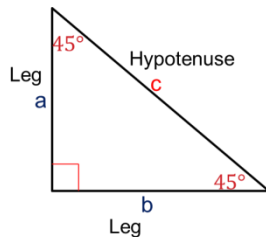
Requirements: A right triangle with one of the other angles given, either as a 45°, a 30° or a 60° angle.

Also, one side must have its length given.

Equations:

For 45° – 45° – 90°

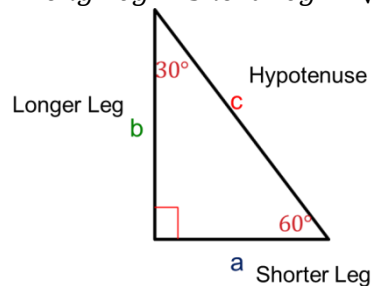
$Hyp = Leg \times \sqrt{2}$



For 30° – 60° – 90°

$Hyp = Short Leg \times 2$

$Long Leg = Short Leg \times \sqrt{3}$



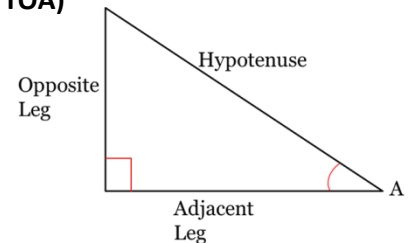
Method # 3: Trigonometric Functions – Sine, Cosine and Tangent (SOH – CAH – TOA)

Requirements: A right triangle with one of these conditions

- One other angle given and at least one side length given.
- At least two side lengths given

Equations: Given a right triangle, with $\angle A$ marked:

$\sin A = \frac{\text{leg opposite } \angle A}{\text{hypotenuse}}$ $\cos A = \frac{\text{leg adjacent to } \angle A}{\text{hypotenuse}}$ $\tan A = \frac{\text{leg opposite } \angle A}{\text{leg adjacent to } \angle A}$



Desired Answers: Missing side lengths or angle measures.