

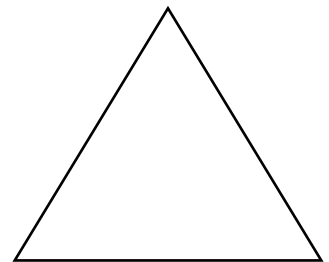
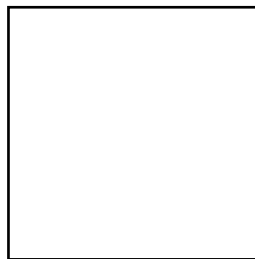
## Solving Problems involving Right Triangles

## Calculating Area Using Special Right Triangles

When finding the area of a \_\_\_\_\_ or an \_\_\_\_\_, you may not have enough information given.

You will have to solve for missing \_\_\_\_\_ using special right triangle rules in order to find the area.

Area of a Square	Area of a Triangle



## Solving Word Problems involving Right Triangles

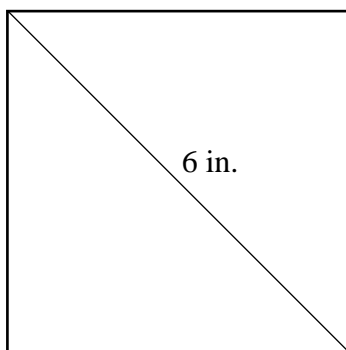
Sometimes, real world situations can be modeled using right triangles.

### Steps for Solving Word Problems

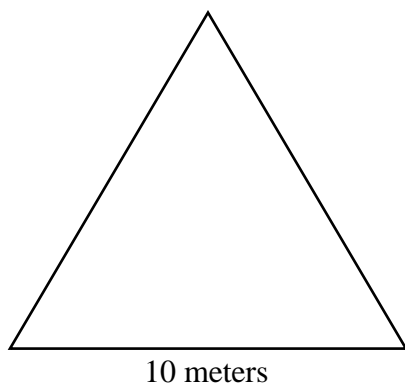
1. Draw and label a diagram of the situation including all known angle measures and all known side lengths.
2. Determine which side or angle you need to solve for.
3. Set up a trig ratio or use special right triangles to solve for the missing side length or angle measure.
4. Answer the problem in a complete sentence.

### Examples

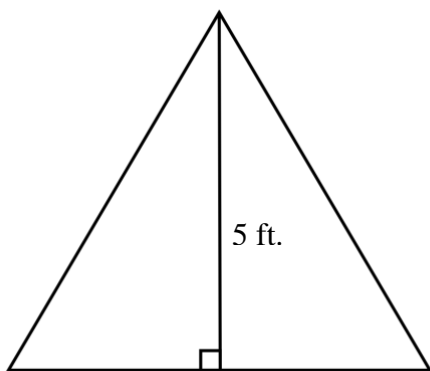
1. Find the area of the square below. Leave your answer in **exact form**.



2. Find the area of the equilateral triangle below. Leave your answer in **exact form**.



3. Find the area of the equilateral triangle below. Leave your answer in **exact form**.



4. A rope with a length of 3.5 meters is tied from a stake in the ground to the top of a tent. It forms a 17 degree angle with the ground. How tall is the tent? Round to the **nearest tenth**.

5. A ladder is leaning up against a wall. The ladder is 10 feet long and is 2 feet away from the wall. Draw and label a diagram of this situation. What is the angle formed by the ladder and the wall? Round to the **nearest degree**.

6. A kite is tied to a stake in the ground. Assume the string is being pulled tight. The length of the string is 24 feet and the angle of elevation from the stake is  $60^\circ$ . Draw and label a diagram of this situation. How high up is the kite? Leave your answer in **exact form**.

