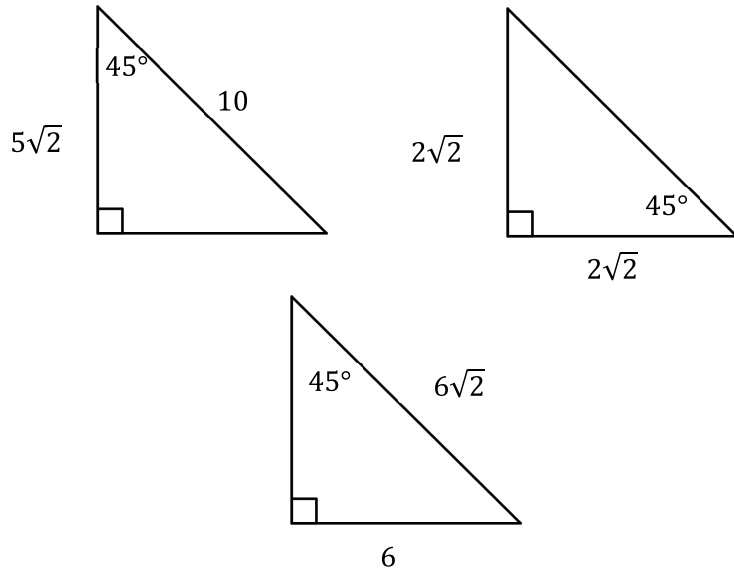


Section 8 – Topic 4
Special Right Triangles: 45° – 45° – 90°

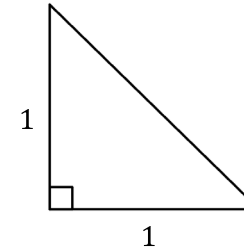
Use the Pythagorean Theorem to find the missing lengths of the following triangles.



Choose three patterns that you observe in the three right triangles above and list them below.

Let's Practice!

1. Consider the following 45 – 45 – 90 triangle. Prove that the ratio of the hypotenuse to one of the legs is $\sqrt{2}:1$.



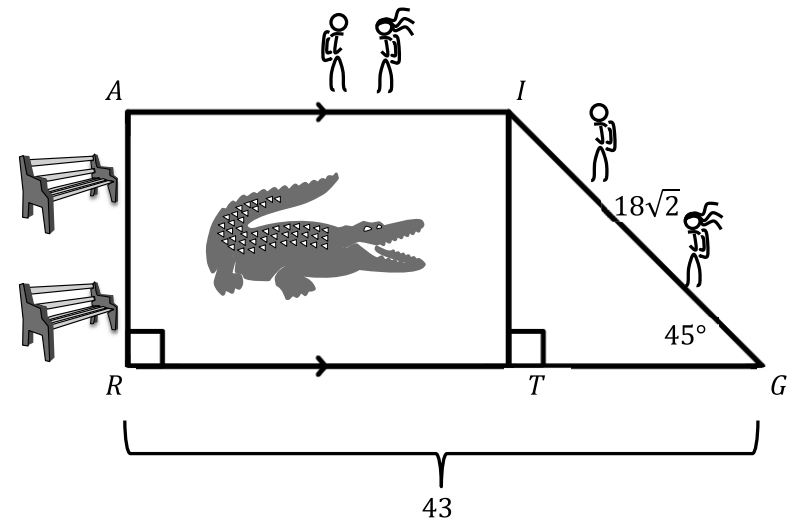
2. Find the hypotenuse of a 45 – 45 – 90 triangle with legs equal to 5 cm.

Try It!

- Find the length of the sides of a square with a diagonal of $25\frac{2}{3}$ meters.
- The Tilley household wants to build a patio deck in the shape of a 45 – 45 – 90 triangle in a nice corner section of their backyard in front of the lake. They have enough room for a triangle with a leg of 36 feet. What will the length of the hypotenuse be?

BEAT THE TEST!

- Consider the figure below.



Part A: What is the perimeter of the above figure?

Part B: Write a 3 - sentence short story explaining the above figure and the calculations made in *Part A*.