**Application Problem:**  The base of MIT’s engineering laboratory is a 30o-60o-90o triangle. The length of the hypotenuse of the triangle is about 294 feet. Find, to the nearest foot, the lengths of the legs of the triangle.

STEP 1: Draw a diagram representing the information provided.

STEP 2: Set up the chart, filling in what you know

STEP 3: Find the missing legs by setting up two separate equations and solving for x.

**Application Problem:** You are designing a square garden, with perimeter of 48 meters, for the courtyard outside Ms. Santos’s classroom. You want to build a walkway for students that cuts diagonally across the garden. To the nearest meter, how long should you make the walkway?

STEP 1: Draw a diagram representing the information provided.

STEP 2: Set up the chart, filling in what you know

STEP 3: Find the distance of the walkway by setting up an equation and solving for x.