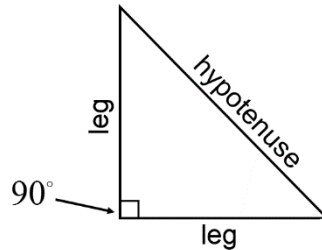


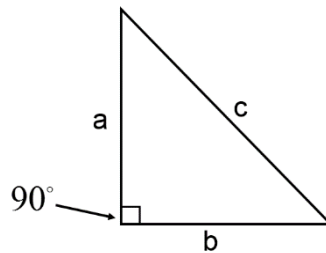
7A – Pythagorean Theorem

❖ Vocabulary, Formulas, Theories:

- **Right Triangle:** a triangle with a 90 degree angle.



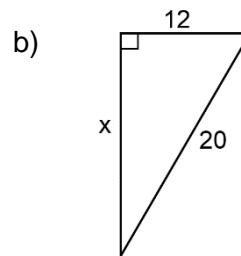
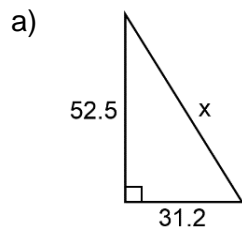
- **Hypotenuse:** the side of a right triangle that is opposite from, or across from, the 90 degree angle.
- **Legs:** the sides of a right triangle that create the 90 degree angle.
- **Pythagorean Theorem:** a formula used with right triangles.



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

📺 Video - ["Pythagorean Theorem - Example 1" - MathontheWeb \(3:06\)](#)

EX1) Determine the length of the unknown side of the right triangle.



❏ Video - "[Pythagorean Theorem - Example 2](#)" - MathontheWeb (7:21)

EX2) Jennifer and some friends are playing softball at a local park. The bases are set up in the shape of a diamond where the distance from each base is 55 feet and the running paths create 90 degree angles. Jennifer is the catcher and curious to know the distance from home plate to each of the bases. Calculate these distances.

EX3) Matt has to build a staircase for a client. The distance from the 1st floor to the 2nd floor is 154 inches. The style of stairs that he builds are 11 inches wide and 7 inches high. Use this information to answer the questions.

- a) How many steps does Matt have to build to get from the 1st to the 2nd floor?
- b) How much horizontal distance is needed to build the staircase?
- c) If a diagonal railing is built for the stairs, what will be its estimated length?