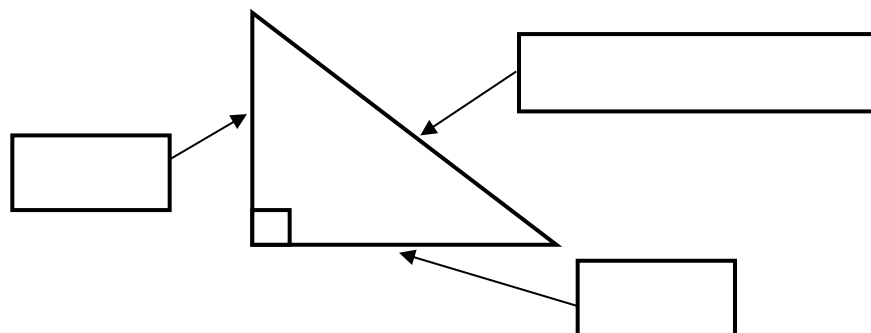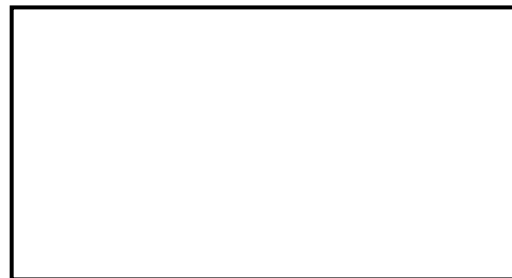# TOPIC 9-3: PYTHAGOREAN THEOREM APPLICATION

PYTHAGOREAN THEOREM: The square of the hypotenuse is equal to the sum of the squares of the legs.

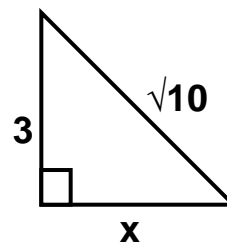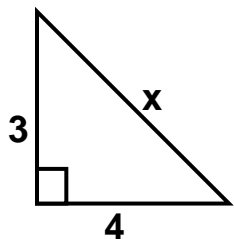$(Hypotenuse)^2 = (Leg)^2 + (Leg)^2$

PYTHAGOREAN THEOREM:

EXAMPLES 1 and 2: Find the value of 'x'.
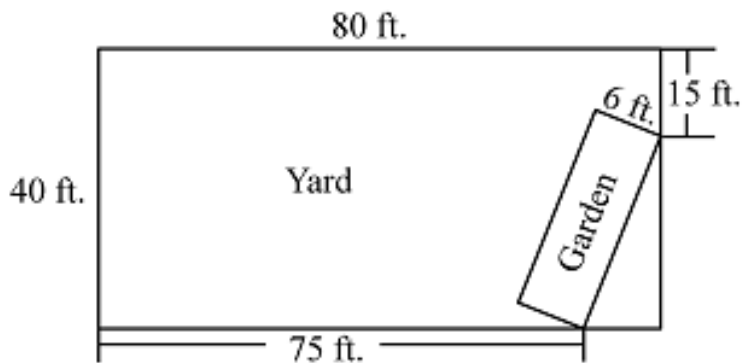
3

x

4

√10

3

x

Let's Look at some Real World Applications Using the Pythagorean Theorem......

Media and Technology:

Televisions are measured diagonally to determine their listed size. Roxanne bought a 40-inch television that measures 24 inches in height. What is the width of the television?
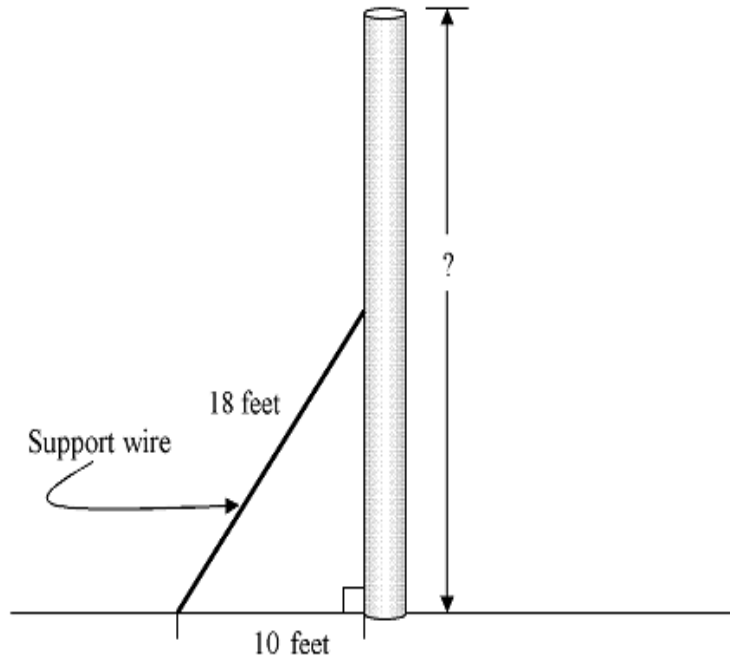
Landscape and Architecture:

Mrs. Aguirre is going to plant a rectangular garden in her rectangular backyard, as shown in the diagram below. Some dimensions of the backyard and the width of the garden are given.

Construction:

An 18-foot-long support wire is attached to a vertical pole. The wire is attached to the ground 10 feet away from the pole.

If the wire meets the pole halfway up the pole, how tall is the pole in feet?

Orienteering:

If point A is 6 meters due east of point C, and point B is 8 meters due north of point C, what is the distance, in meters, between A and B?