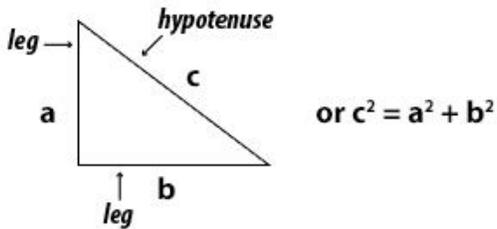The connection in the Pythagorean Relationship is between the legs (the two shorter sides) and the hypotenuse (the longest side) of the right triangle.

Pythagorean Theorem
The Pythagorean Relationship states that, the square of the hypotenuse of a right triangle is equal to the sum of the square of the other two sides. You learned about squaring a number in algebra. Your triangle sides are:

$$\text{or } c^2 = a^2 + b^2$$

Select the best answer for the following questions and type it on the line provided.

1. One leg of a right triangle measures 12 cm. The other leg measures 14 cm. What is the measurement of the hypotenuse? (Round to the nearest tenth.) _____

    a. 12 cm
    b. 14 cm
    c. 18.4 cm
    d. 19 cm

2. The hypotenuse of a right triangle measures 24 m. One leg measures 12 m. What is the measurement of the other leg? (Round to the nearest tenth.) _____

3. The bottom of a ladder is placed 6 feet from the wall of a barn. The wall and the ground form a right angle. If a ladder is 20 feet in length, how far up the wall does it reach? (Round to the nearest foot.) _____

    a. 19.07 feet
    b. 6 feet
    c. 20 feet
    d. 19 feet

4. Ann drove directly south 45 miles and then 25 miles directly east. Find the shortest distance in miles from her starting point to her ending point. (Round to the nearest tenth.) _____