

## Using the Pythagorean Theorem

1. Find the length of the diagonal of a rectangle whose sides are 6 feet and 8 feet.  
The diagonal is 10 feet.
2. The legs of a right triangle are 15 cm and 20 cm. How long is the hypotenuse of the triangle?  
The hypotenuse is 25 cm.
3. A 13 foot ladder leans against the wall of a building. If the foot of the ladder is 5 feet from the building, how high up the wall does the ladder rise?  
The ladder rises 12 feet up the wall.
4. Find the length of the unknown side of this right triangle whose hypotenuse is 13.

$$x = 12$$

5. The area of the two smaller squares drawn on the legs of this right triangle are 25 and 144. What is the area of the larger square drawn on the hypotenuse?

The larger square has  $25 + 144 = 169$  units of area.

6. The area of the square drawn on the hypotenuse of this triangle is 100. If the area of the small square drawn on one of the legs is 25, what is the area of the middle-sized square drawn on the other leg?

The area of the small square is  $100 - 25 = 75$ .