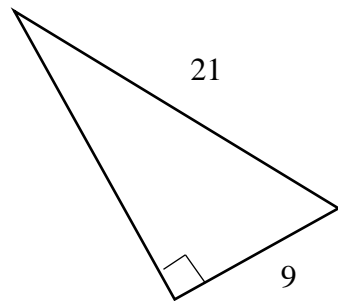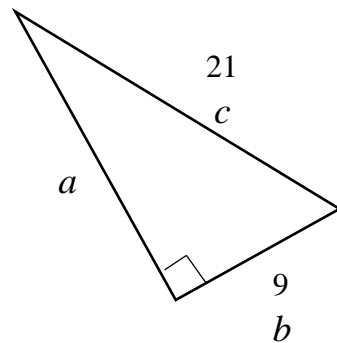### Solving for the Length of a Leg of a Right Triangle Practice

1. Solve for the missing side length of the triangle shown.

Step 1: *Label the sides of the triangle.*

Step 2: *Write the formula, substitute known values, and solve.*

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

$$a^2 + 9^2 = 21^2$$

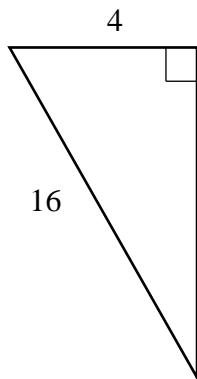$$a^2 + 81 = 441$$

Subtract 81 from both sides to isolate a^2.
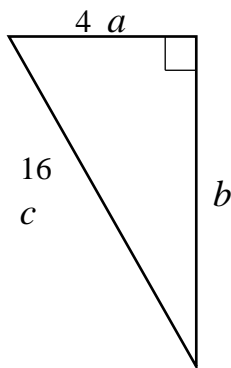
$$a^2 = 441 - 81$$

$$a^2 = 360$$

$$a = 18.97 \ units$$

The length of side a is approximately 19.0 units.

2. Solve for the missing side length of the triangle shown.

4

16

Step 1: *Label the sides of the triangle.*

4 *a*

16
c

b

Step 2: *Write the formula, substitute known values, and solve.*
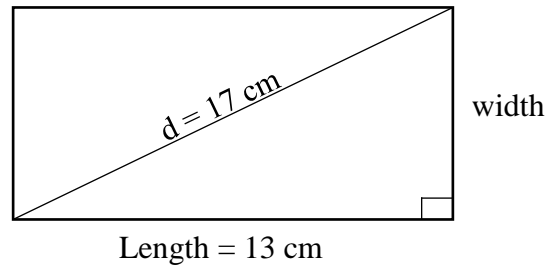
$a^2 + b^2 = c^2$

$4^2 + b^2 = 16^2$

$16 + b^2 = 256$

$b^2 = 240$

$b = 15.49$

The length of side b is approximately 15.5 units.

3. What is the width of the rectangle shown?

Length = 13 cm

$$l^2 + w^2 = d^2$$
$$13^2 + w^2 = 17^2$$
$$169 + w^2 = 289$$
$$w^2 = 289 - 169$$
$$w^2 = 120$$
$$w = 10.95$$

The width of the rectangle is approximately 11.0 cm.