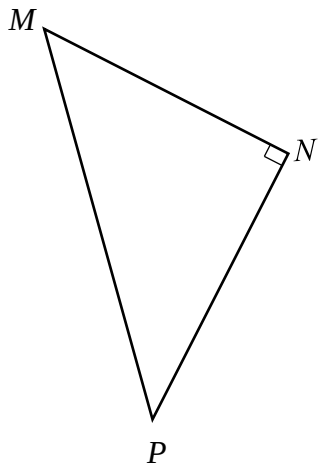
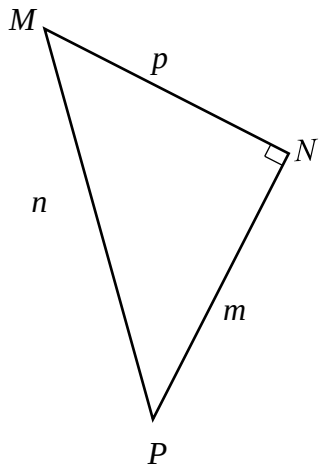
Solving for the Hypotenuse Practice

1. Rewrite the Pythagorean Theorem for the triangle shown.

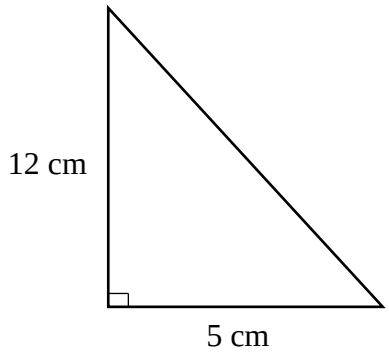


Label the sides of the triangle.

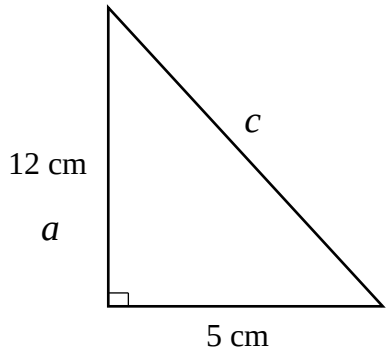


$p^2 + m^2 = n^2$ *or* $m^2 + p^2 = n^2$

2. Determine the length of the hypotenuse in the triangle shown.



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

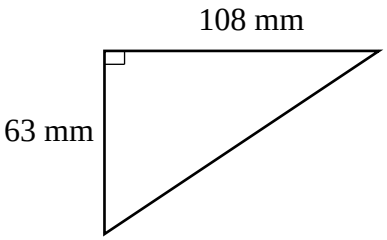


Step 2: *Write the formula, substitute known values, and solve.*

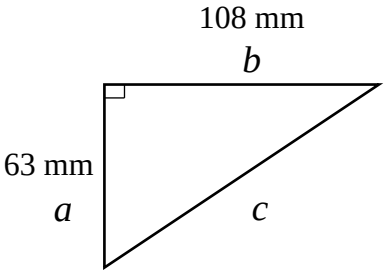
$$a^2 + b^2 = c^2$$
$$12^2 + 5^2 = c^2$$
$$(12 \times 12) + (5 \times 5) = c^2$$
$$144 + 25 = c^2$$
$$169 = c^2$$
$$\sqrt{169} = \sqrt{c^2}$$
$$13 = c$$

The hypotenuse is 13 cm long.

3. Determine the length of the hypotenuse in the triangle shown.



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



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

$$a^2 + b^2 = c^2$$
$$63^2 + 108^2 = c^2$$
$$3\,969 + 11\,664 = c^2$$
$$15\,633 = c^2$$
$$125.03 = c$$

The hypotenuse is approximately 125.0 mm long.