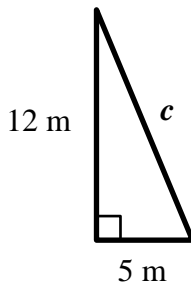




### Pythagorean Theorem: Find the Length of the Hypotenuse (page 1)

Find the length of the hypotenuse of each triangle.

Example A:



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

Write the Pythagorean Theorem

$$5^2 + 12^2 = c^2$$

Substitute 5 for  $a$  and 12 for  $b$

$$25 + 144 = c^2$$

Evaluate

$$169 = c^2$$

Add

$$\sqrt{169} = \sqrt{c^2}$$

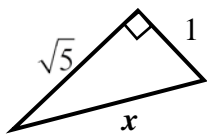
Take positive square root of each side

$$13 = c$$

Simplify

Therefore, the length of the hypotenuse is 13 meters.

Example B:



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

Write the Pythagorean Theorem

$$1^2 + (\sqrt{5})^2 = c^2$$

Substitute 1 for  $a$  and  $\sqrt{5}$  for  $b$

$$1 + 5 = c^2$$

Evaluate

$$6 = c^2$$

Add

$$\sqrt{6} = \sqrt{c^2}$$

Take positive square root of each side

$$\sqrt{6} = c$$

Simplify

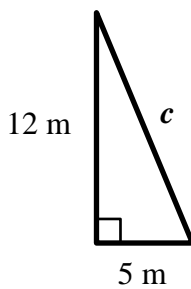
Therefore, the length of the hypotenuse is  $\sqrt{6}$  units or approximately 2.45 units.



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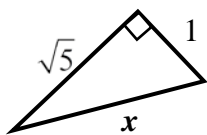
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Add

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Take positive square root of each side

$$\sqrt{6} = c$$

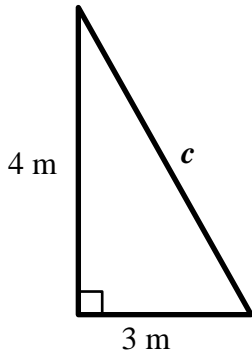
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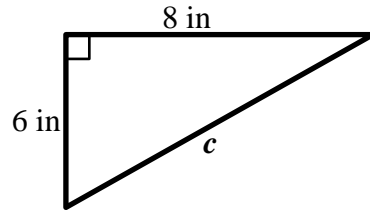
## Pythagorean Theorem: Find the Length of the Hypotenuse (page 2)

Find the length of the hypotenuse of each triangle.

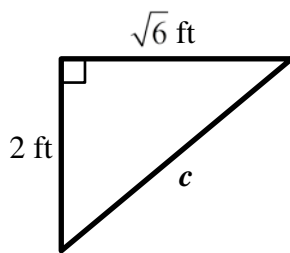
1.



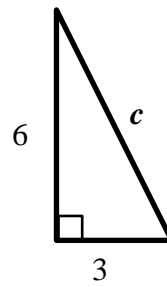
2.



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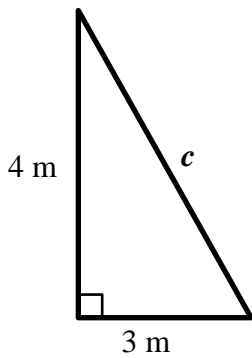
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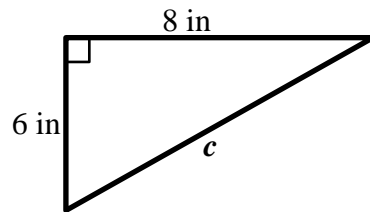
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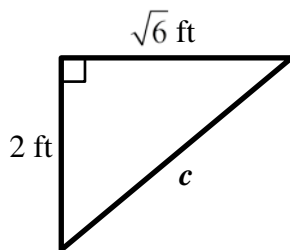
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