

TRIGONOMETRY

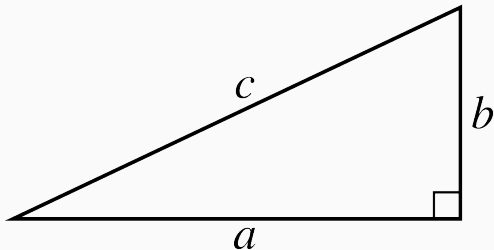
The Pythagorean Theorem

Practice Problems

Chipmunk Math



PYTHAGOREAN THEOREM

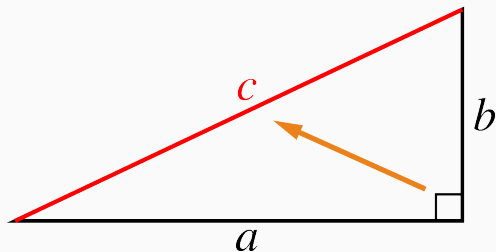


Theorem (Pythagorean)

For any right triangle,

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

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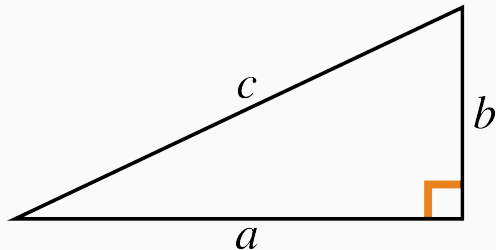
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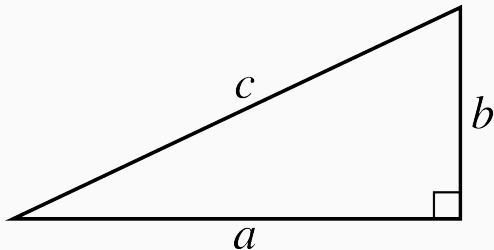
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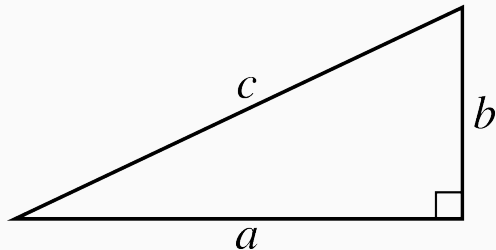
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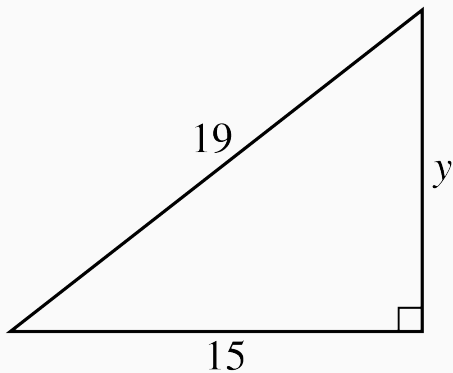
- c is the **hypotenuse**: side opposite right angle (the longest side).
- Theorem is only true for **right triangles**. If the triangle does not have a 90° corner, you can not use the theorem.
- **Memorize** this thing. Seriously.

USING THE PYTHAGOREAN THEOREM

Use the theorem to find unknown sides on right triangles.
Set up using the equation, then solve.

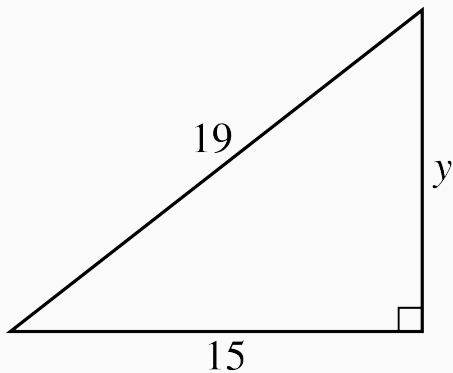
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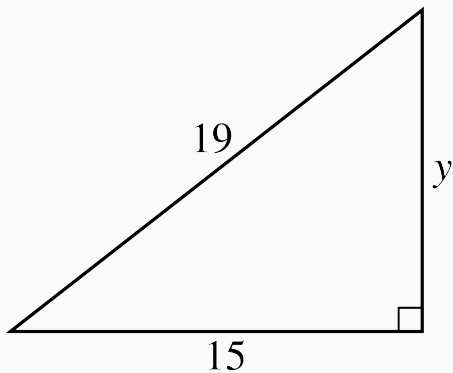
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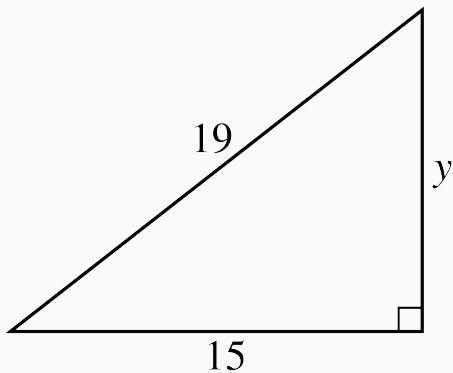
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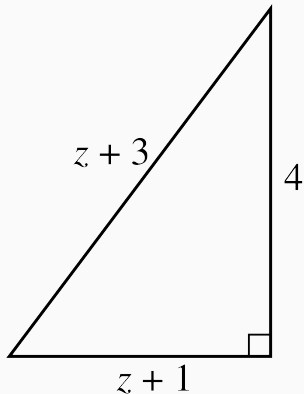
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Then solve with algebra.

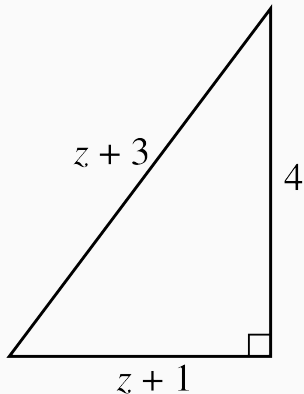
USING THE PYTHAGOREAN THEOREM, CONT.

When dealing with more complicated expressions, make sure to plug in using parentheses: ($\sim\sim\sim$).



USING THE PYTHAGOREAN THEOREM, CONT.

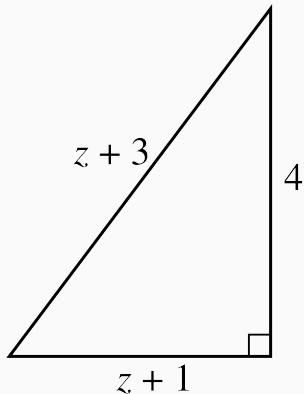
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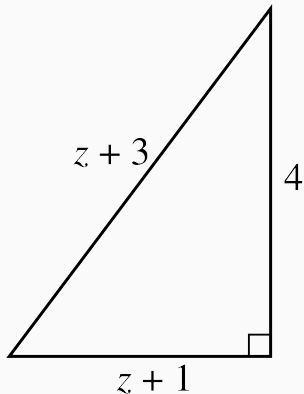
$$a^2 + b^2 = c^2$$

NO:

$$z + 1^2 + 4^2 = z + 3^2$$

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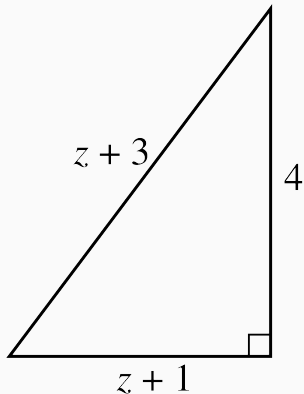
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NO:

~~$$z + 1^2 + 4^2 = z + 3^2$$~~

Yes:

$$(z + 1)^2 + 4^2 = (z + 3)^2$$

CONVERSE OF PYTHAGOREAN THEOREM

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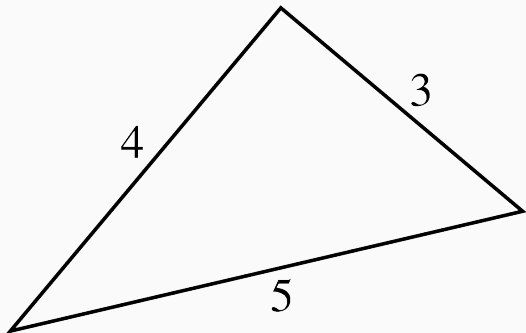
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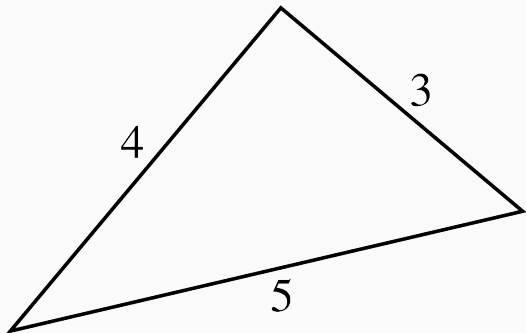
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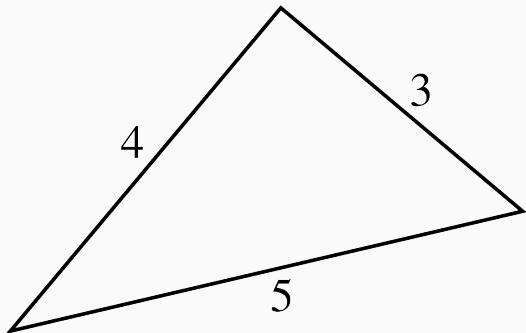
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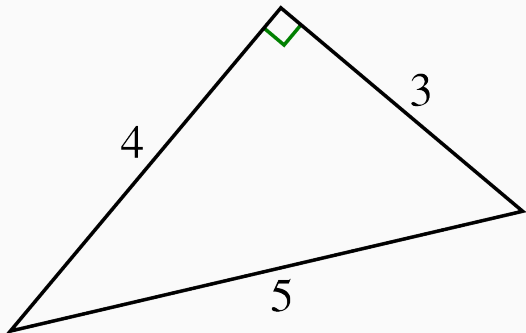
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$$25 = 25 \checkmark$$



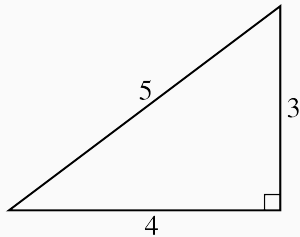
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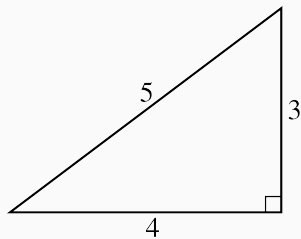
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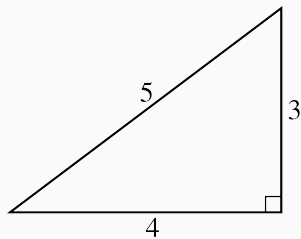


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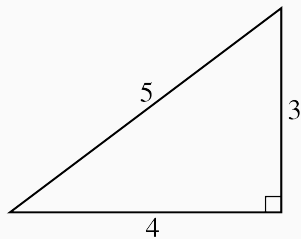


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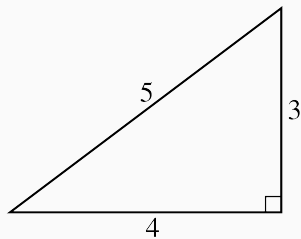
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Most common triples: (3, 4, 5) (5, 12, 13) (8, 15, 17)

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Memorizing a few of them can give you an edge.

Learn more in the video “**Extra—Pythagorean Triples.**”

THANKS FOR WATCHING!





Watch the rest of the videos on this topic!

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