

5 -1 Simplifying Square Roots and Pythagorean Theorem Notes

Review of Simplifying Radicals: Square Roots

A square root (radical) is an expression that contains a _____ where the _____

The goal to simplifying radicals is to _____.

The easiest way to do this is by _____.

Example 1: Simplify each square root completely.

a. $\sqrt{64}$

b. $\sqrt{27}$

c. $\sqrt{180}$

d. $5\sqrt{28}$

e. $2\sqrt{24}$

f. $3\sqrt{8} \cdot 2\sqrt{5}$

g. $\frac{2\sqrt{3}}{\sqrt{16}}$

h. $\frac{\sqrt{2}}{3\sqrt{72}}$

i. $\frac{12\sqrt{50}}{4\sqrt{2}}$

Review of the Pythagorean Theorem

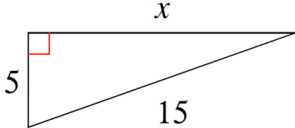
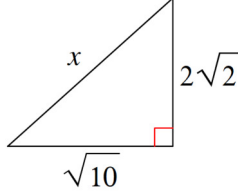
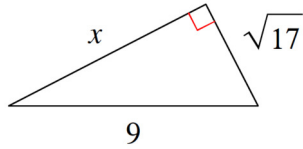
Pythagorean Theorem → _____

Remember → The _____ represents a side of a right triangle that forms the right angle

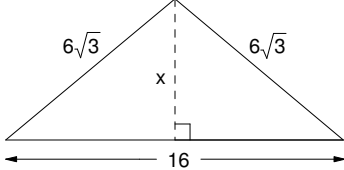
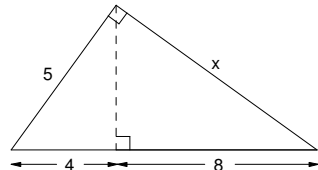
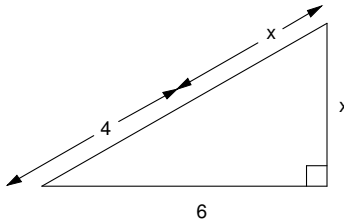
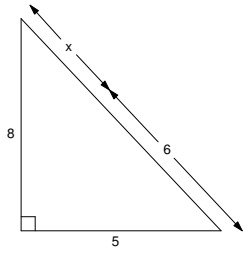
The _____ represents the side across from the right angle and is the longest side

When finding missing sides your answers MUST be in _____

Example 2: Find the length of the missing side x of each given right triangle. Keep in radical form.

<p>a.</p> 	<p>b.</p> 	<p>c.</p> 
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Example 3 – Critical Thinking: Find the length of x. Round to tenth place.

<p>a.</p> 	<p>b.</p> 
<p>c.</p> 	<p>d.</p> 

Example 4: For the following – a. Draw a picture representing each word problem.

b. Solve for what the problem is asking for. Round to tenth place.

<p>a. A telephone support cable attaches to the pole 20 feet high. If the cable is 26 feet long, how far from the bottom of the pole does the cable attach to the ground?</p>	<p>b. Tara leaned a ladder against her house. The bottom of the ladder is 12 feet from the house and the top of the ladder is 14 feet above the ground. How long is the ladder?</p>	<p>c. A walkway forms one diagonal of a square playground. The walkway is 18 meters long. How long are the sides of the playground?</p>
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