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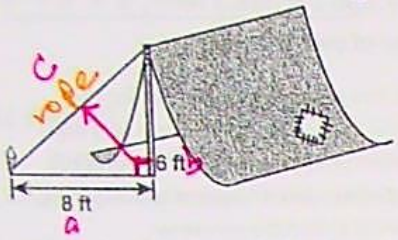
Objectives: I can apply the Pythagorean Theorem to solve real life situations involving right triangles.

## Review Using the Pythagorean Theorem

State all lengths as square roots, then approximate to the nearest hundredth. If a diagram is not provided, you must draw one.

1) A tent is supported by a guy rope tied to a stake, as shown in the diagram. What is the the length of the rope? 10 ft




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

$c^2 = 8^2 + 6^2$

$c^2 = 64 + 36$

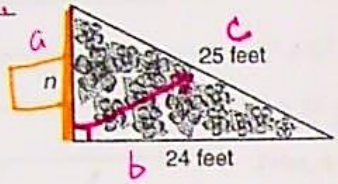
$\sqrt{c^2} = \sqrt{100}$

$c = 10$

2) Stephanie is planning a right triangular garden. She marked two sides that measure 24 feet and 25 feet. What is the length of side *n*? 7 ft.

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

49 ft




$a^2 + 24^2 = 25^2$

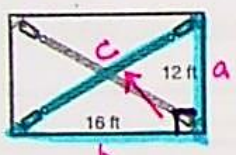
$a^2 + 576 = 625$

$-576 \quad -576$

$\sqrt{a^2} = \sqrt{49}$

$a = 7$

3) A builder needs to add diagonal braces to a wall. The wall is 16 feet wide by 12 feet high. What is the length of each brace? 20 ft.




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

$c^2 = (12)^2 + (16)^2$

$c^2 = 144 + 256$

$\sqrt{c^2} = \sqrt{400}$

$c = 20$

4) The diagram at the right shows how a post was broken. What was the original height of the post? 54 in or 4.5 ft

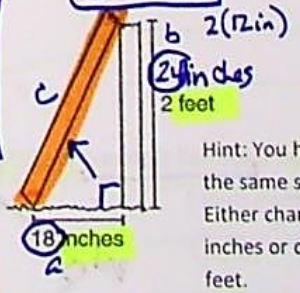
$c^2 = (18)^2 + (24)^2$

$c^2 = 324 + 576$

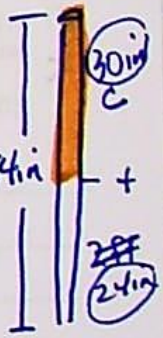
$\sqrt{c^2} = \sqrt{900}$

$c = 30$ in

$\frac{54}{12}$

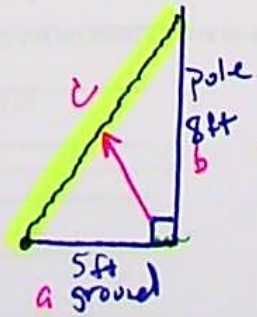



Hint: You have to use the same size units. Either change to inches or change to feet.




5) A wire is stretched from the top of an 8-ft pole to a bracket 5 ft. from the base of the pole. How long is the wire?

[Draw diagram here.]




$c^2 = 5^2 + 8^2$

$c^2 = 25 + 64$

$\sqrt{c^2} = \sqrt{89}$

$c \approx 9.43$ ft

$\sqrt{81} \quad 89 \quad 100$