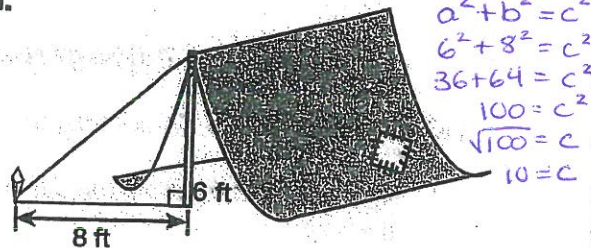


Use the Pythagorean theorem to solve each problem.

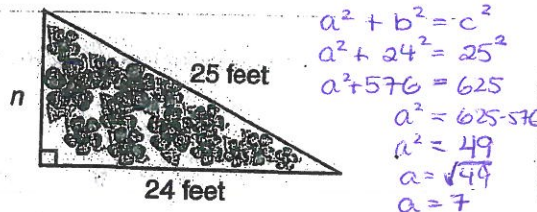
A tent is supported by a guy rope tied to a stake, as shown in the diagram. What is the length of the rope? 10 ft



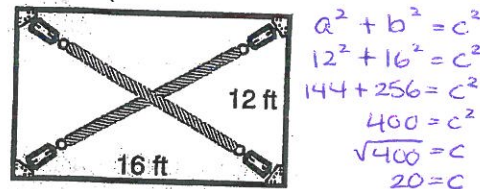
If the supporting stake in Problem 1 were 15 feet from the tent, and an 8-foot tent pole were used, what would be the length of the guy rope? 17 feet

$a^2 + b^2 = c^2$
 $8^2 + 15^2 = c^2$
 $64 + 225 = c^2$
 $289 = c^2$
 $\sqrt{289} = c$ $c = 17$

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 feet



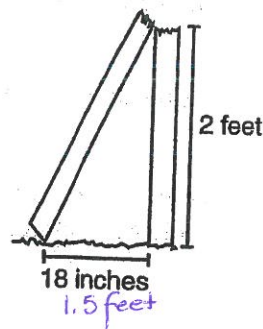
A builder needs to add diagonal braces to a wall. The wall is 16 feet wide by 12 feet high. What is the length of each brace? Each brace is: 20 feet in length



The diagram at the right shows how a post was broken. What was the original height of the post? 4.5 feet

1 ft = 12 inches
18 inches = 1.5 feet

$a^2 + b^2 = c^2$
 $1.5^2 + 2^2 = c^2$
 $2.25 + 4 = c^2$
 $6.25 = c^2$
 $\sqrt{6.25} = c$
 $2.5 = c$
 Total Height = $2.5 + 2 = 4.5$ feet



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

The sets of numbers 3, 4, 5 and 5, 12, 13 are examples of Pythagorean triples. Use what you know about the Pythagorean theorem to explain why these numbers are called Pythagorean triples.

Determine whether the following sets of three numbers are Pythagorean triples. Write yes or no for each set of numbers.

8, 15, 17 YES

15, 20, 25 YES

10, 48, 52 YES

2, 9, 11 NO

$a^2 + b^2 = c^2$
 $2^2 + 9^2 = 11^2$
 $4 + 81 = 121$
 $85 \neq 121$

39, 80, 89 YES