

Name: _____

Show all your work including formula, what you plug in and your final answer rounded to two decimal places.

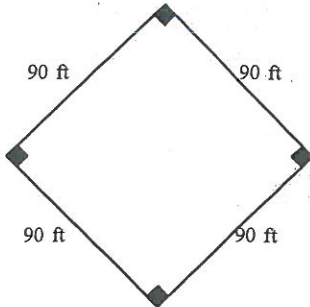
The Pythagorean Theorem and Ladders



1. You're locked out of your house and the only open window is on the second floor, 25 feet above the ground. You need to borrow a ladder from one of your neighbors. There's a bush along the edge of the house, so you'll have to place the ladder 10 feet from the house. What length of ladder do you need to reach the window?

2. There is a building with a 12 ft high window. You want to use a ladder to go up to the window, and you decide to keep the ladder 5 ft away from the building to have a good slant. How long should the ladder be?

The Pythagorean Theorem and Baseball

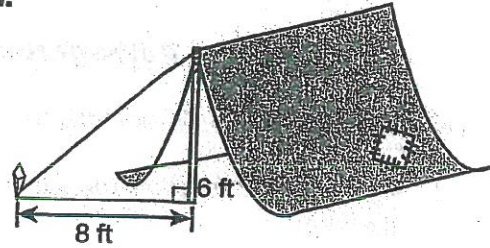


3. You've just picked up a ground ball at first base, and you see the other team's player running towards third base. How far do you have to throw the ball to get it from first base to third base, and throw the runner out?

4. On a baseball diamond the bases are 90 ft apart. What is the distance from home plate to second base in a straight line?

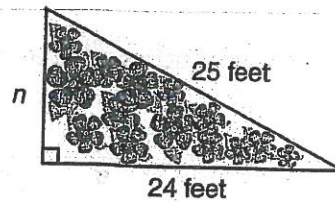
Use the Pythagorean theorem to solve each problem.

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

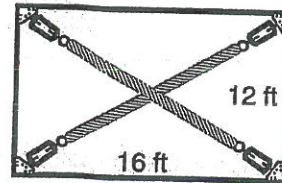


If the supporting stake in Problem 1 were 15 feet from the tent, and an 8-foot tent pole were used, what would be the length of the guy rope? _____

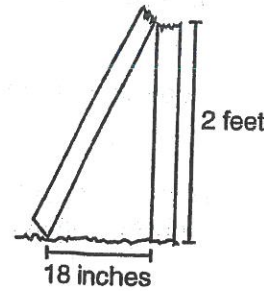
Stephanie is planning a right triangular garden. She marked two sides that measure 24 feet and 25 feet. What is the length of side n ? _____



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? _____



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



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 _____

15, 20, 25 _____

10, 48, 52 _____

2, 9, 11 _____

39, 80, 89 _____