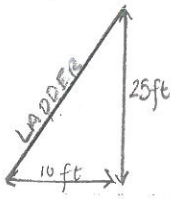
Name: A. Zito Answer Key

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?

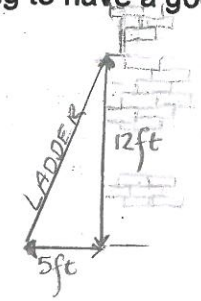
$a^2 + b^2 = c^2$
$(10)^2 + (25)^2 = c^2$
$100 + 625 = c^2$
$725 = c^2$
$\sqrt{725} = c$
$c = 26.93$ Ladder is 26.93 feet



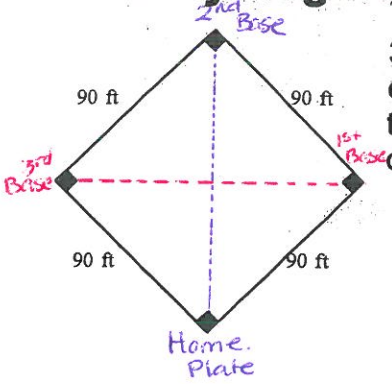
2. There is a building with a 12 ft high window. You want to use a ladder to go up to the window, and you decide to keep the ladder 5 ft away from the building to have a good slant. How long should the ladder be?

$a^2 + b^2 = c^2$
$(5)^2 + (12)^2 = c^2$
$25 + 144 = c^2$
$169 = c^2$
$\sqrt{169} = c$
$13 = c$

Ladder needs to be 13 ft long



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?

$a^2 + b^2 = c^2$
$(90)^2 + (90)^2 = c^2$
$8100 + 8100 = c^2$
$16\,200 = c^2$
$\sqrt{16200} = c$
$c = 127.28$

Ball needs to be thrown 127.28 ft.

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?

Distance from home plate to 2nd Base is 127.28 ft.