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**7.3C HW: Pythagorean Theorem Word Problems**

DIRECTIONS: Solve each of the following. Please draw a picture and use the Pythagorean Theorem to solve.

 Be sure to label all answers.

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| 1. The bottom of a ladder must be placed 3 feet from a wall. The ladder is 12 feet long. How far above the ground does the ladder touch the wall? Round your answer to the nearest tenth.
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| 1. A surveyor holds a laser range finder 4 feet above the ground and determines that the range finder is 80 feet from a building and 120 feet from the top of the building. What is the height h of the building? Round your answer to the nearest tenth.

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| 1. What is the length of the diagonal of a 10 cm by 15 cm rectangle? Round your answer to the nearest hundredth.
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| 1. The diagonal of a rectangle is 25 in. The width is 15 in. What is the area of the rectangle?
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| 1. A soccer field is a rectangle 90 meters wide and 120 meters long. The coach asks players to run from one corner to the corner diagonally across the field. How far do the players run?
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| 1. A baseball diamond is a square that is 90 feet on each side. If a player throws the ball from 2nd base to home, how far will the ball travel? Round your answer to the nearest tenth.
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| 1. The area of a square is 81 cm2. Find the perimeter of the square.
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| 1. You and your friend are standing back-to-back. Your friend runs 8 feet forward, and then 6 feet right. At the same time, you run 4 feet forward, and then run 3 feet to the right. You stop and throw a football to your friend, who catches it. How far did you throw the football?
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| **EXTRA CREDIT**. Show all work and explain how you know if the table will fit through the front door. Jill’s front door is 42” wide and 84” tall. She purchased a circular table that is 96 inches in diameter. Will the table fit through the front door? (HINT: turn table to fit through the door diagonally) |

**Solutions:** 1) 11.6 ft 2) 93.4 ft 3) 18.03 cm 4) 300 sq. inches 5) 150 m 6) 127.3 ft 7) 36 cm 8) 15 ft