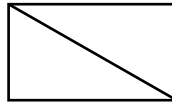


Pythagorean Theorem Application Problems

Level 1:

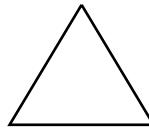
- 1) An 18 foot ladder is leaning against a wall. If the base of the ladder is 7 feet from the wall, how high up on the wall does the ladder reach?
- 2) Mrs. Cleaver bought a flat screen television to go in her kitchen so she can watch the news while she cooks. The screen is 16 inches wide and 12 inches high. Find the length of the diagonal.



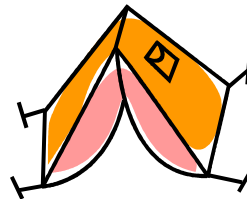
- 3) Hulk left home and walked 10 blocks west. Then he turned and walked 8 blocks south. Using the shortest distance, how far is Hulk from his home?
- 4) Paul rode his horse 3 miles due east from his barn. Then he rode 5 miles due north. How far was he from his barn, assuming the ground is flat? Round to the nearest tenth.
- 5) A television antenna is 10 feet tall. It has three wires that attach to its top and are anchored 8 feet from its base. How long is each wire?

Level 2:

- 1) Each side of an equilateral triangle is 10 cm. Find the height, h , of the triangle.



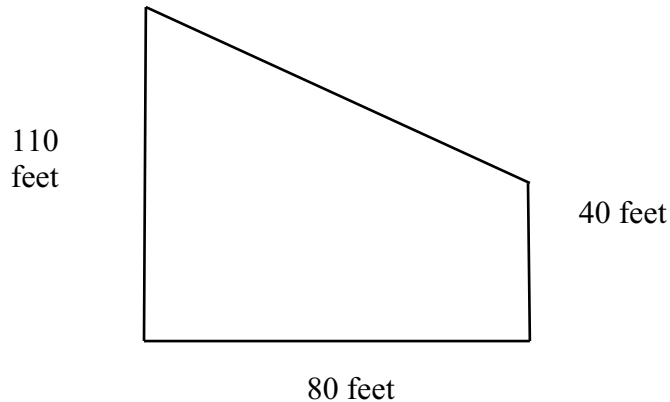
- 2) A baseball diamond is a square with sides of 30 feet. What is the distance between first base and third base?
- 3) Oscar's dog house is shaped like a tent. The slanted sides are both 5 feet long and the bottom of the house is 6 feet across. What is the height of his dog house, in feet, at its tallest point?



- 4) If the legs of an isosceles right triangle are 6 units long, find the length of the hypotenuse.
- 5) Starting from point A, a boat sails due south for 6 miles, then due east for 5 miles, and then due south for 4 miles. How far is the boat from A?

Level 3:

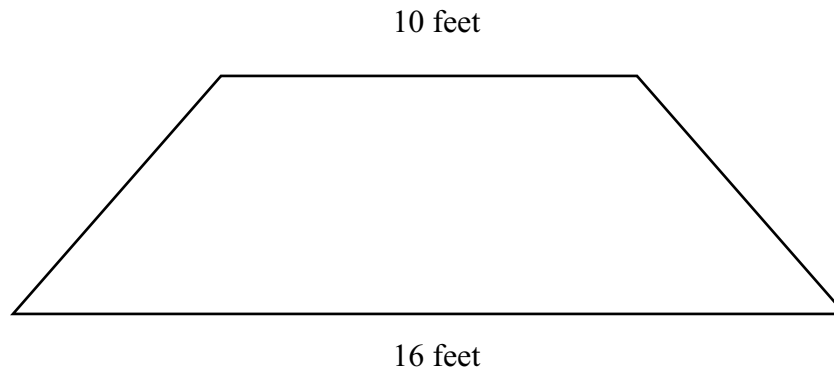
- 1) If the hypotenuse of a right triangle is 30 cm long and one of the legs is twice as long as the other, how long are the legs of the triangle?
- 2) Two cars leave a house at the same time. One car travels 60 km/hr north, while the other car travels 40 km/hr east. After 1 hour, how far apart are the cars?
- 3) Josh needs to buy fencing for his garden. If fencing cost \$8.42 per foot, what will be the cost of putting a fence around his garden?



- 4) What is the area of a square that has a diagonal which is $\sqrt{32}$ inches?
- 5) Is a triangle with measurements of 15', $\sqrt{31}$ and 16' a right triangle? Explain your answer.

Challenge Questions:

- 1) Find the perimeter of the Isosceles Trapezoid which has a height of 4 feet.



- 2) A rectangle with a perimeter of 98 feet has a length 31 feet longer than its width. What is the length of a diagonal inside the rectangle?