

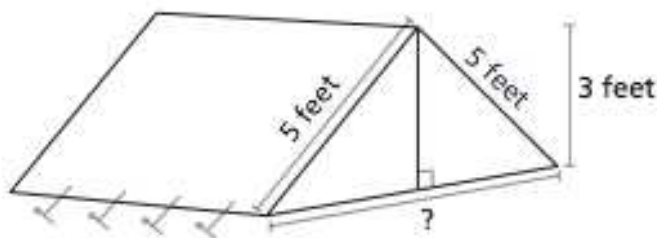
## P.S. #11.3 - Applications of Pythagorean Theorem

Name: \_\_\_\_\_ Class: \_\_\_\_\_

- 1.) Matt is building a skateboard ramp with a piece of plywood that is 13 feet long. He wants the height of the ramp to be 5 feet. To make a strong ramp, the base must form a right angle with the back of the ramp. What will be the length of the base, in feet?



- 2.) The diagram below shows the tent that Sara bought to go on a camping trip.



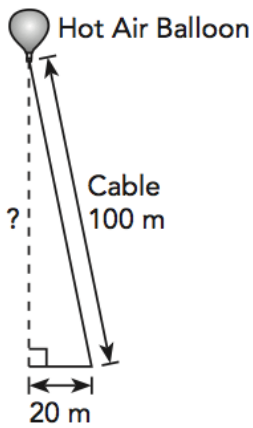
[not drawn to scale]

How wide is the *entire* opening along the bottom of the tent?

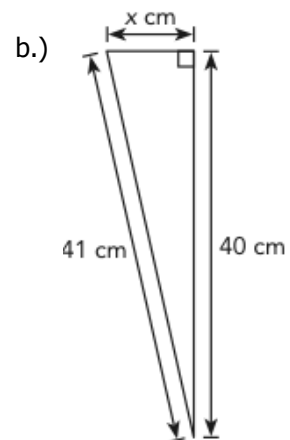
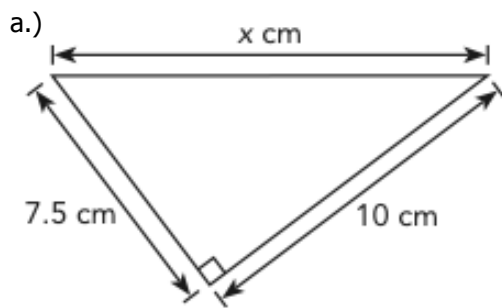
- (A) 4 ft      (B) 5 ft      (C) 6 ft      (D) 8 ft
- 3.) A baseball diamond is a square with sides of 90 feet. Calculate the distance, to the *nearest foot*, between home plate and second base.
- 4.) Kayla placed a 10-ft ladder against a wall. The bottom of the ladder was 5 feet away from the wall. Find the height of the wall, to the nearest tenth.
- 5.) One end of a cable is attached to the top of a flagpole and the other end is attached 6 feet away from the base of the pole. If the height of the flagpole is 12 feet, find the length of the cable to the nearest hundredth.

6.) A whiteboard is 6 feet long and 3 feet wide. Find the length of the longest straight line that can be drawn on the whiteboard to the nearest tenth.

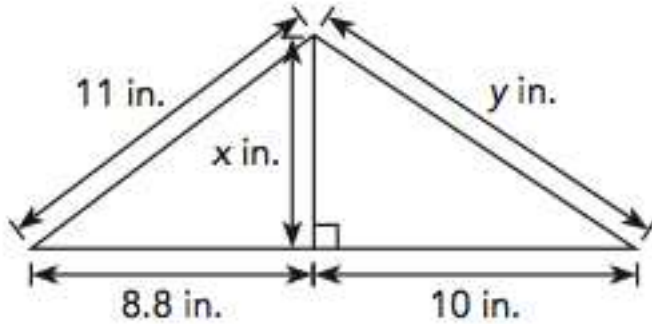
7.) A hot air balloon is attached to the ground by a taut 100-meter cable, as shown in the diagram. Find the vertical height of the balloon above the ground to the nearest meter.



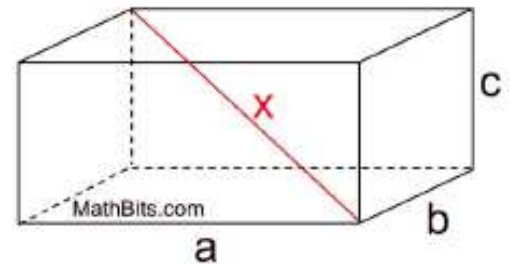
8.) Solve for  $x$ :



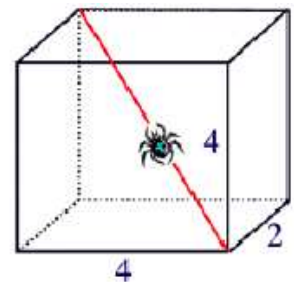
- 9.) Solve for  $x$  and  $y$ . Round to the nearest hundredth if necessary.



- 10.) A diagonal is drawn on the inside of a box as shown. Find the length of  $x$ , in inches, if  $a = 10''$ ,  $b = 4''$ ,  $c = 5''$ . Round to the nearest tenth.



- 11.) A spider is living in a small box as shown. A straight spider web reaches from the lower right corner to the upper left back corner of the box. If the spider makes a complete trip up and back on this web, how far will he have traveled? The measurements are given in inches.



- 12.) Challenge: With a partner, create a word problem that requires Pythagorean Theorem to solve it. You may see your problem on the test! ☺

**Answers:**

1.) 12 ft

2.) D

3.) 127 ft

4.) 8.7 ft

5.) 13.41 ft

6.) 6.7 ft

7.) 98 m

8.) a.)  $x = 12.5$  b.)  $x = 9$

9.)  $x = 6.6$  in,  $y = 11.98$  in

10.) 11.9 in

11.) 12 in.