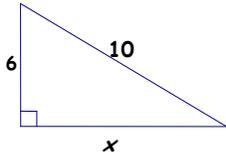


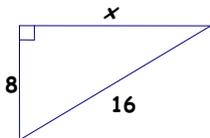
# Pythagorean Theorem and Converse

~ 1 ~

1. Find the length of the leg of the right triangle.



2. Find the value of  $x$ .

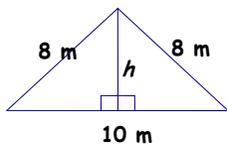


3. The size of a television is determined by the length of its diagonal. If you buy a 50 inch big screen with length 40 inches, what is the width of the TV?

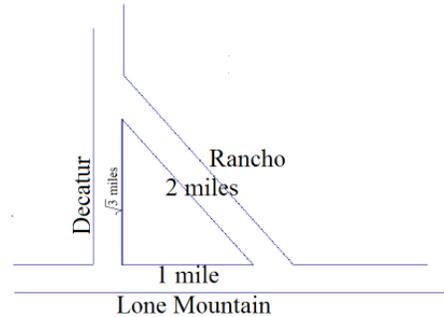
4. Which type of triangle is represented if the lengths of the sides are 7, 9, and 10?

- A. Right      B. Obtuse  
C. Acute      D. Equilateral

5. Find the height of the triangle.



6. The diagram shown has the dimensions of a triangular park.



Is Decatur  $\perp$  to Lone Mountain? Justify your answer.

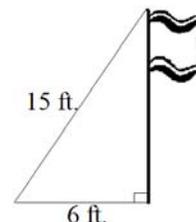
7. If the perimeter of a square is 40 cm, what is the length of a diagonal?

- A.  $40\sqrt{2}$       B.  $20\sqrt{2}$   
C.  $10\sqrt{2}$       D. 10

8. Which set of numbers can represent the side lengths of an obtuse triangle?

- A. 2, 3, 4      B. 3, 5,  $\sqrt{34}$   
C. 3, 7, 7.5      D. 9, 12, 15

9. To keep a flagpole from blowing over it is anchored with wire from the top to a spot 6 feet from the base of the pole. What is the height of the pole?



## Pythagorean Theorem and Converse

~ 2 ~

10. Which set of numbers represents a Pythagorean triple?

- A.  $7, 7\sqrt{3}, 14$       B. 7, 22, 24  
C. 6, 9, 10              D. 7, 24, 25

*Decide whether the sets of numbers can represent the side lengths of a triangle. Then, if they can, classify the triangle as right, acute, or obtuse. (15-17)*

15. 8, 40, 41

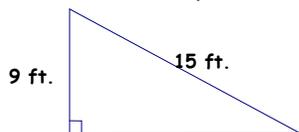
16. 4, 4, 10

17. 18, 19, 25

11. You place a 12 ft ladder against a wall. If the base of the ladder is 4 ft from the wall, how high up the wall does the top of the ladder reach?

12. You want to make sure a door to a room is rectangular. You measured the side of the door and the bottom of the door to have lengths of 8 ft and 3 ft respectively. What must the length of the diagonal of the door be to ensure that the door is rectangular?

13. Find the area of the triangle.



14. Find the length of the leg of the right triangle.

