

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

## Pythagorean Theorem

1) The sides of certain triangles are given below. Determine which of them are right triangles :  
[AB = c, BC = a, CA = b]

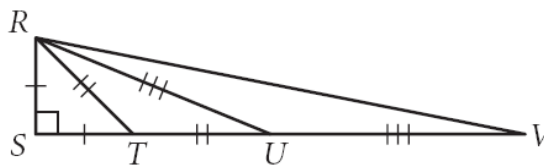
1)  $a = 4$  cm,  $b = 5$  cm,  $c = 3$  cm

2)  $a = 1.6$  cm,  $b = 3.8$  cm,  $c = 4$  cm

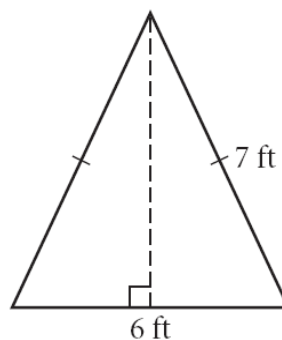
3)  $a = 9$  cm,  $b = 16$  cm,  $c = 18$  cm

4)  $a = 7$  cm,  $b = 24$  cm,  $c = 25$  cm

2) Given that  $RS = 3$  cm and  $RU = 5.3$  cm. Find  $RV$

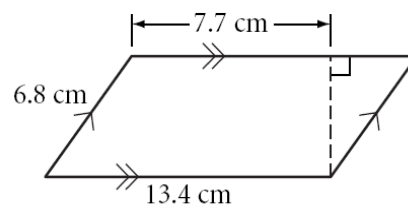


3) Find the area of the given triangle



4) Find the length of diagonal of a rectangle the lengths of whose sides are 3 cm and 4 cm.

5) Find the area of the parallelogram



6) Find the length of the diagonal of a square of side 10 cm.

7) P and Q are points on the sides CA and CB respectively of  $\triangle ABC$ , right angled at C.

Prove that  $AQ^2 + BP^2 = AB^2 + PQ^2$

8) A ladder is placed against a wall such that its top reaches up to a height of 4 m of the wall. If the foot of the ladder is 3 m away from the wall, find the length of the ladder.

9)  $\triangle PQR$  is an isosceles right triangle with  $\angle Q = 90^\circ$ .

Prove that  $PR^2 = 2PQ^2$ .

10) Given  $\triangle PQR$ , with  $m\angle P = 90^\circ$ ,  $PQ = 20$  in., and  $PR = 15$  in., find the area of  $\triangle PQR$ , the length of the hypotenuse, and the altitude to the hypotenuse.