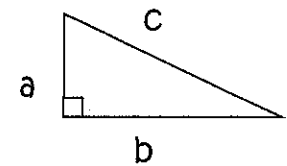


Right Triangle Review #1

The Pythagorean Theorem states:

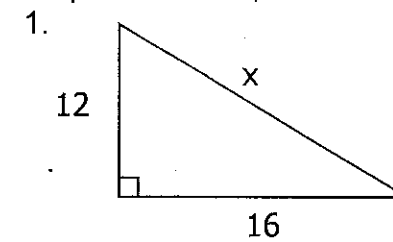
In a right triangle the sum of the Squares of the legs is equal to the square of the hypotenuse.

That is to say,  $a^2 + b^2 = c^2$



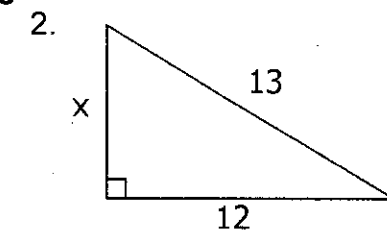
KNOW HOW TO PROVE

In questions 1-3, use the **Pythagorean theorem** to solve for the indicated variables.



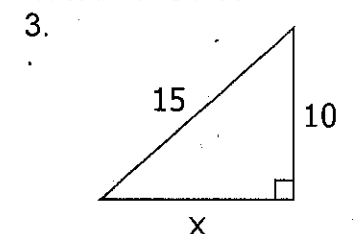
$$12^2 + 16^2 = x^2$$

$$x = \underline{20}$$



$$x^2 + 12^2 = 13^2$$

$$x = \underline{5}$$



$$x^2 + 10^2 = 15^2$$

$$\sqrt{x^2} = \sqrt{125}$$

$$\sqrt{125} = 5$$

$$x = \underline{5\sqrt{5}}$$

Special Right Triangle Review

**Key**  
S.L.=short leg  
Hyp= hypotenuse  
L.L=long leg

**Summary:**

45-45-90

2 legs are  $\cong$

$$\text{Hyp} = \sqrt{2} \cdot \text{LEG}$$

$$\text{Leg} = \frac{\text{hyp}}{\sqrt{2}}$$

30-60-90

S.L. is your reference leg (always find it FIRST)

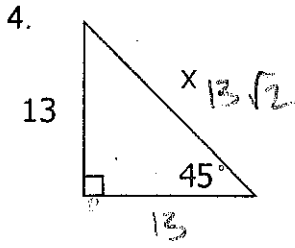
$$\text{L.L} = \text{S.L} \cdot \sqrt{3}$$

$$\text{S.L} = \frac{\text{L.L}}{\sqrt{3}}$$

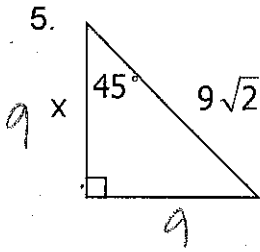
$$\text{S.L} = \frac{\text{hyp}}{2}$$

$$\text{HYP} = \text{S.L} \cdot 2$$

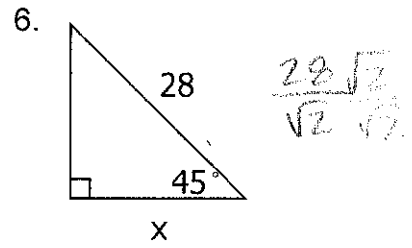
In questions 4-12, use what we learned about **special right triangles** to find the value of  $x$  and  $y$ . **Show your work for full credit.**



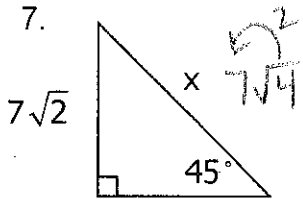
$x = 13\sqrt{2}$



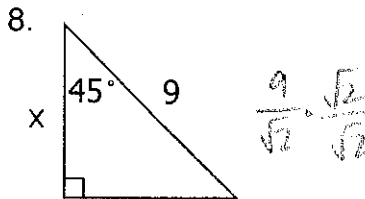
$x = 9$



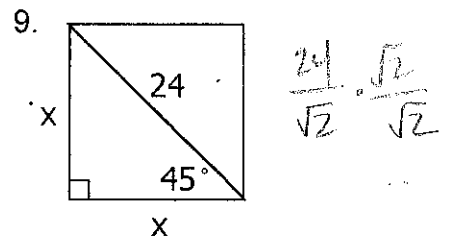
$x = 14\sqrt{2}$



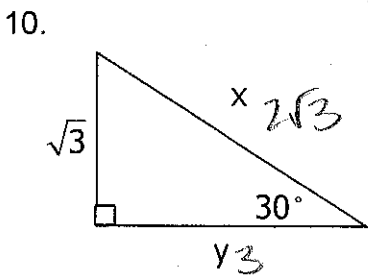
$x = 14$



$x = \frac{9\sqrt{2}}{2}$

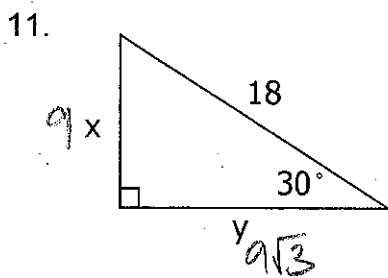


$x = 12\sqrt{2}$



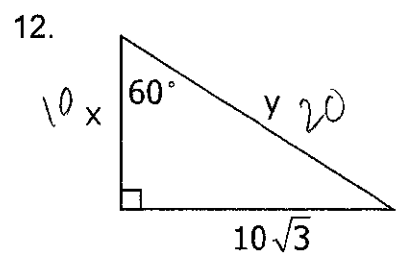
$x = 2\sqrt{3}$

$y = 3$



$x = 9$

$y = 9\sqrt{3}$



$x = 10$

$y = 20$

Name \_\_\_\_\_

Date \_\_\_\_\_

## Part 2

A. Give 5 Pythagorean Triples.

1) 3-4-5

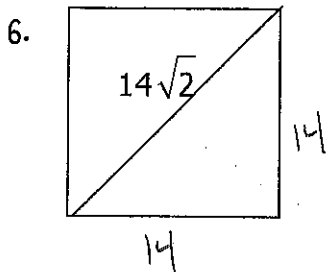
2) 5-12-13

3) 7-24-25

4) 8-15-17

5) 9-40-41

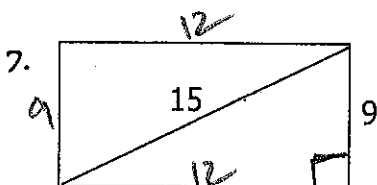
B. Now apply what you know to find what you don't know. :



Find the perimeter of the square with the given diagonal.

$$P = 4(14)$$

$$P = 56$$



Find the perimeter of the rectangle.

$$2(9) + 2(12)$$

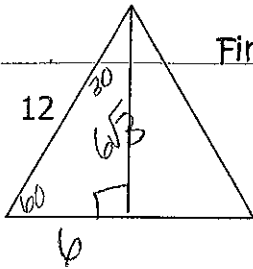
$$P = 42$$

$$9^2 + x^2 = 15^2$$

$$x = 12$$

8.

Find the height of this equilateral triangle.



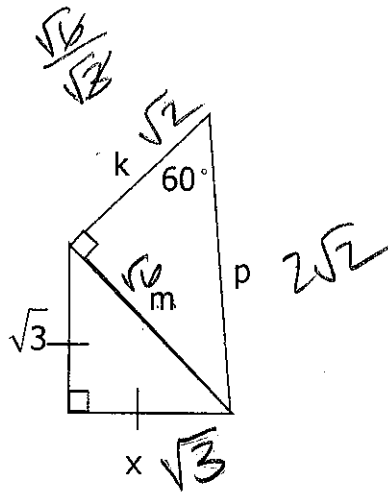
$$h = b\sqrt{3}$$

9. Find the missing lengths

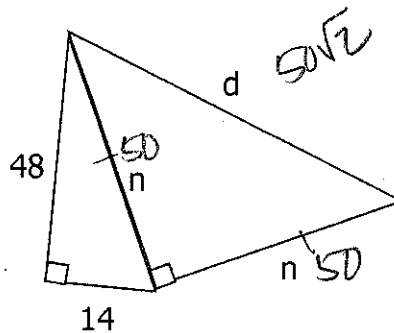
$$m = \sqrt{6}$$

$$k = \sqrt{2}$$

$$p = 2\sqrt{2}$$



10. Find the missing lengths.



$$14^2 + 48^2 = n^2$$

$$n = 50$$