Today you will need:

Math Notebook

Small Whiteboard Materials

Homework from Last Night

6.2 Pythagorean Theorem and It's Converse

Obj: Students will understand all parts of the Pythagorean Theorem by practicing on individual whiteboards.

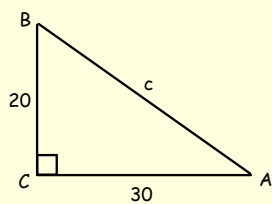**Pythagorean Theorem** refers to the relationship between the lengths of the three sides in a right triangle.
- If a and b are the legs of the right triangle and c is the hypotenuse, then $a^2 + b^2 = c^2$.
- Keep in mind, the c is **always** the longest side.

leg "a"   hypotenuse "c"
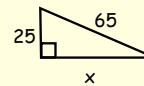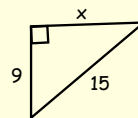
right angle

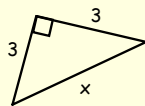leg "b"

Example 1: Find a.

B

a   13
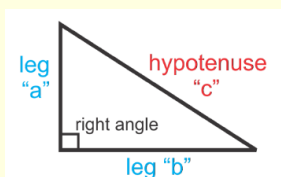
C   12   A
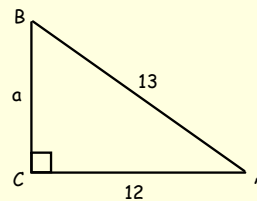
Example 2: Find c.

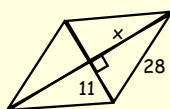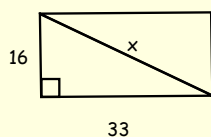
Individual White Boards.

Find x.

Find x.

If three whole numbers a, b, and c satisfy the equation $a^2 + b^2 = c^2$, then the numbers a, b, and c form a **Pythagorean Triple**.

Common Pythagorean Triples

3,4,5	5,12,13	8,15,17	7,24,25
6,8,10	10,24,26	16,30,34	14,48,50
9, 12,15	15,36,39	24,45,51	21,72,75
3x,4x,5x	5x,12x,13x	8x,15x,17x	7x,24x,25x

Converse of the Pythagorean Theorem: If, in a triangle, c is the length of the longest side and the shorter sides have lengths a and b, and $a^2 + b^2 = c^2$, then the triangle is a right triangle.

Also, if $a^2 + b^2 > c^2$ the triangle is acute

and, if $a^2 + b^2 < c^2$ the triangle is obtuse.

Determine whether a triangle with lengths 21, 28, 35 is a right triangle.

For the given two sides, determine the length of the third side if the triangle is a right triangle.

Use the Pythagorean Theorem to determine what kind of a triangle is formed by the given lengths.