Lesson 9-6 - Families of Right Triangles

Here's your warmup!

1. **Use the following formulas to find a, b, and c for the values given:**

$$a = 2uv$$
$$b = u^2 - v^2$$
$$c = u^2 + v^2$$

   i. u = 2, v = 1
   ii. u = 3, v = 2
   iii. u = 4, v = 1

2. **Find a^2, b^2, and c^2 for each part of problem 1.**

3. **What relationship do you notice about a^2, b^2, and c^2?**

Today, we will talk about Pythagorean Triples. This is a pretty straight forward concept...these are just multiples of well-known right triangles. It will behoove you to memorize the ones given below at a *minimum*!!

Definition

Any three whole numbers that satisfy the equation $a^2 + b^2 = c^2$ form a *Pythagorean Triple*.

Common families of Pythagorean triples include:

3, 4, 5

5, 12, 13

7, 24, 25

8, 15, 17

9, 40, 41

Following is an example of how these can be used...it's just quicker than doing all the algebra associated with Pythagorean Theorem:

Find AB