Exploring the Pythagorean Theorem With G.S.P.

Use the Geometer’s Sketchpad drawing to complete the table below for at least 6 different triangles (2 acute, 2 right, and 2 obtuse). Follow these steps to make a new triangle then record your results in the table:

1. Move *A, B,* or *C* to make a new triangle with ***c* as the longest side length.**
2. Record the type of triangle and the value of $a^{2}, b^{2},$ and $c^{2}$ in the table below.

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| **Type of Triangle***Classify by Angles* | $$a^{2}$$ | $$b^{2}$$ | $$c^{2}$$ | $$a^{2}+b^{2}$$ |
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| **Converse of the Pythagorean Theorem:**  Assume that $a,b, and c$ are the three sides of a triangle and *c* is the largest side.If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , then the triangle is a right triangle  If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , then the triangle is an acute triangle. If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , then the triangle is an obtuse triangle. |

**Try These**

Decide if the following sides make a right triangle, acute triangle, or an obtuse triangle.

1. 15, 8, 17
2. 12, 6, 7
3. 9, 7, 10
4. 11, 60, 61
5. $\sqrt{3}, 2, 3$
6. $\sqrt{5}, \left(\sqrt{5}-1\right), \left(\sqrt{5}+1\right)$