Name ______________

Class ______________

Problem 1 – Investigating side lengths

Use page 1.2 to explore the following questions.

What is the relationship between c^2 and $a^2 + b^2$ when $\triangle ABC$ is a right triangle?

What is the relationship between c^2 and $a^2 + b^2$ when $\triangle ABC$ is an acute triangle?

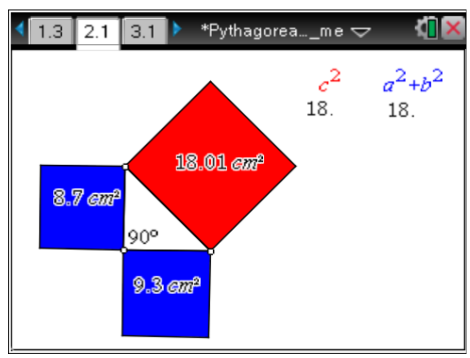
What is the relationship between c^2 and $a^2 + b^2$ when $\triangle ABC$ is an obtuse triangle?

Use page 1.3 to determine whether a triangle with the given side lengths is acute, right, or obtuse.

1. 3 in., 7 in., 8 in. ________________
2. 3 ft, 5 ft, 5 ft ________________
3. 8 cm, 15 cm, 17 cm ________________
4. 7.9 m, 11.5 m, 15.4 m ________________
5. 26.2 in., 36 in., 48.1 in. ________________

Problem 2 – Using squares

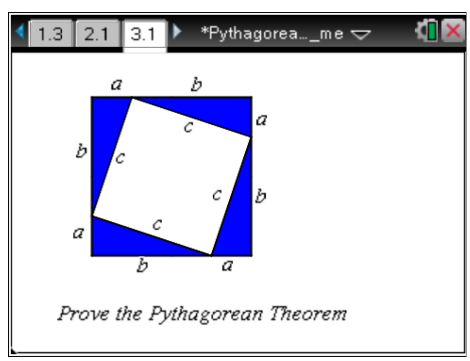
Explain how the diagram on page 2.1 demonstrates the Pythagorean Theorem.



Problem 3 – Extension

Use the diagram on page 3.1 to prove the Pythagorean Theorem by substituting expressions into the following equation. Then simplify each side.

$$A_{\text{outer square}} = A_{\text{four triangles}} + A_{\text{center square}}$$



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