Pythagorean Theorem History and Proof Webquest

Welcome to the History and Proof webquest for the Pythagorean Theorem. Your mission has three phases:

- Phase 1: Read about Pythagoras, tell a little bit about his life, and paraphrase how he discovered the proof.
- Phase 2: Apply the Pythagorean Theorem given values to plug into the formula.
- Phase 3: Evaluate three proofs of the Pythagorean Theorem and select one to paraphrase and reconstruct.

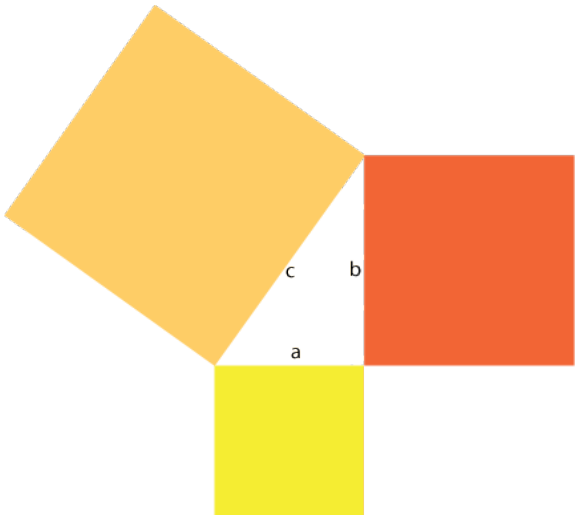
Objectives

After completing the History and Proof webquest, students will be able to...

- Correctly demonstrate knowledge of the life and work of Pythagoras.
- Correctly apply the Pythagorean Theorem to solve numerical problems and word problems given the problems.
- Correctly reconstruct a proof of the Pythagorean Theorem given several proofs to choose from.

History and Proof
Phase 1: Pythagoras

1. Read the following Web pages:
    - Pythagoras was a Strange Dude
    - Rope Stretcher
2. Print out the pythagorean-theorem-history-proof (PDF) and answer the following questions under Phase 1.



1. When and where was Pythagoras born?
2. Why did Thales tell Pythagoras to travel the “ancient lands?”
3. Who did Pythagoras study with in Egypt? What secret did these people have and what did it enable them to do?
4. What was Pythagoras’ most famous discovery? State Pythagoras’ formula in words and mathematical symbols.
5. Paraphrase how Pythagoras discovered a proof of the formula.

History and Proof
Phase 2: Problems

Answer the following questions under Phase 2 of your worksheet. Give exact answers by reducing radicals. Do not reduce to decimals.

1. a = 3, b = 4, find c
2. a = 11, b = 13, find c
3. a = 6, c = 10, find b
4. A rectangle has a width of 4 yards and a length of 5 feet. How long is the diagonal in feet?
5. Find the length of a rectangle that has a diagonal of 25 feet and a width of 15 feet.
6. A 15 foot ladder is leaned against a wall. If the base of the ladder is 8 feet from the wall, how high up the wall will the ladder reach?

History and Proof
Phase 3: Proof

1. Browse the following Web pages:
    - Cut the Knot: Pythagorean Theorem
    - Pythagorean Theorem by Angie Head
2. Answer the following questions under Phase 3 of your worksheet.
    1. List three proofs of the Pythagorean Theorem. Include the full name of the person who discovered each proof.
    2. Evaluate one proof that, for you, is either is the most straightforward or the most interesting. Reconstruct the proof below. Defend the proof by drawing a diagram and using mathematical language to explain it. If you need graph paper, print out a sheet from Print Free Graph Paper. Attach any extra paper to the worksheet.