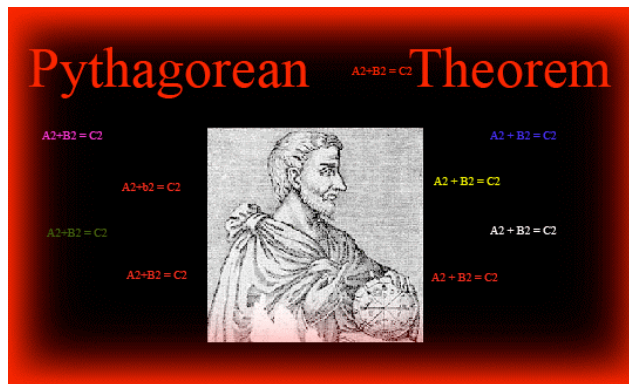


# How the Pythagorean Theorem has developed over Time

By: Kimberly Eckard



[sunsethigh.dade.k12.fl.us](http://sunsethigh.dade.k12.fl.us)

“If we look around for evidence that people knew the Theorem, however, we find it in one form or another all over the world- in Mesopotamia, in Egypt, in India, in China, and yes, in Greece.”  
-authors of *Math through the Ages*



~2500 BC: Megalithic monuments on the British Isles incorporate right triangles with integer sides.



[www.viewzone.com](http://www.viewzone.com)



2000 - 1786 BC: The Middle Kingdom Egyptian papyrus Berlin 6619 includes a problem, the solution to which is a Pythagorean triple.



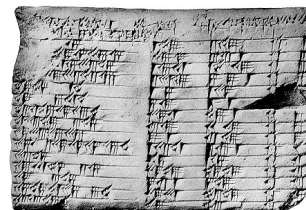
~1800 BCE: Two clay tablets found in Mesopotamia, YBC 7289 and Plimpton 322, demonstrate that the Babylonians knew the Pythagorean Theorem.

Yale Tablet



[www.britannica.com](http://www.britannica.com)

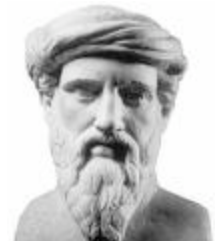
Plimpton 322



[www.math.ubc.ca](http://www.math.ubc.ca)



~600 BCE: In a group of writings from India, known collectively as sulbasturas, an author by the name of Baudhayana states, “The rope which is stretched across the diagonal of a square produces an area double the size of the original square.” This is the special case of the Pythagorean Theorem for the 45-45-90 degree triangles. It also contains a list of Pythagorean triples discovered algebraically.



[www.travel-to-samos.com](http://www.travel-to-samos.com)

~570 BCE: Pythagoras is born on the island of Samos. After traveling through the ancient world, he founds the Pythagorean School. He discovers that the laws of musical harmony depend on ratios of integers and concludes that “Number Rules the Universe”-the Pythagorean motto.

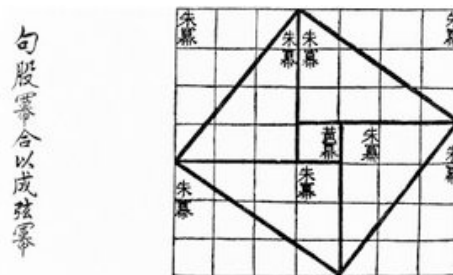
~540 BCE: The Pythagoreans prove that the square root of 2 is irrational, and are said to have proved the Pythagorean Theorem.

~ 400 BCE: Plato gave a method for finding Pythagorean triples that combined algebra and geometry.

~300 BCE: Euclid compiles the *Elements*, and it is said to be the most influential mathematical text of all time. The Pythagorean Theorem appears as Proposition I 47, and again as Proposition VI 31 with a different proof. The converse of the Pythagorean Theorem appears as Proposition I 48.

~250 BCE: Archimedes of Syracuse applies the Pythagorean Theorem to a series of inscribed and circumscribed polygons to approximate the value of  $\pi$ .

206 BCE-221 CE: The Pythagorean Theorem is known in China as the *kou-ku*. Written during the Han Dynasty the *Chao Pei Suan Ching* states the Pythagorean Theorem in words and gives a proof by dissection. From the same period, Pythagorean triples appear in *Nine Chapters on the Mathematical Art*.



[en.wikipedia.org](http://en.wikipedia.org)

Third Century CE: Pappus of Alexandria proves an extended version of the Pythagorean Theorem, true for any triangles.

Ninth Century CE: Tabit ibn Qorra ibn Mervan, Abu-Hasan, al-Harrani, an Arabic mathematician, proves a generalization of the Pythagorean Theorem involving any triangle.

Eleventh Century CE: Bhaskara’s *Behold!* Proof. Bhaskara gives a “proof without words” of the Pythagorean Theorem. It was identical to the Chinese proof.

1482: The first printed edition of the *Elements* appears in Venice.

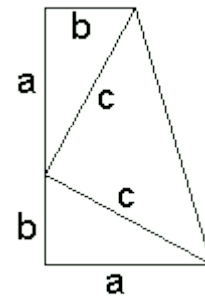
1482: The first English edition of the *Elements* is published.

1637: *Fermat’s Last Theorem*. Pierre de Fermat conjectures that the equation  $x^n + y^n = z^n$  has no solutions in positive integers except when  $n=1$  and  $n=2$ .

1753: Euler proves *Fermat’s Last Theorem* for the case  $n=3$ .



1876: James A. Garfield, the future twentieth president of the United States, proposes an original proof of the Pythagorean Theorem.



[www.geocities.com](http://www.geocities.com)



1888: E. A. Coolidge, a blind girl, offers a dissection proof of the Pythagorean Theorem similar to Bhaskara's.



1905: Albert Einstein publishes his special theory of relativity. The footprints of the Pythagorean Theorem appear in nearly every formula of relativity.



1927: Elisha Scott Loomis publishes *The Pythagorean Proposition*.



1934: Stanley Jashemski, nineteen years old from Youngstown, Ohio, proposes possibly the shortest known proof of the Pythagorean Theorem.



1938: Ann Condit, a sixteen-year-old student at Central Junior-Senior High School in South Bend, Indiana, devises an original proof of the Pythagorean Theorem.



1940: Elisha Scott Loomis revises *The Pythagorean Proposition*. The revised edition contains 371 proofs.



1955: The town of Tigani on the island of Samos is renamed Pythagorio. A statue of Pythagoras is built at the town's harbor.



[www.samos-beaches.com](http://www.samos-beaches.com)



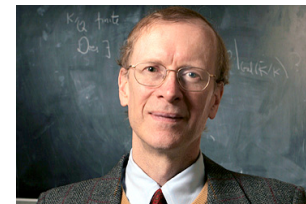
1993: Andrew Wiles at Princeton University announces he had proved Fermat's Last Theorem.



1994: Wiles fixes a flaw found in his 200-page proof and Fermat's Last Theorem is now considered proven.



1996: Alexander Bogomolny founds a Web site, *The Pythagorean Theorem and Its Many Proofs*.



[www.princeton.edu](http://www.princeton.edu)



2008: The Pythagorean Theorem plays an important part in many people's everyday lives, from construction workers, to mathematicians, to your average geometry students. The Pythagorean Theorem is used to know how far away someone or something is, how tall a ladder needs to be to reach a certain spot on a building, and even how far a baseball player needs to throw the ball to get a runner out.

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