

MESOPOTAMIAN MATHEMATICS



A Babylonian tablet (YBC 7289, c. 1700 BC) reveals two mathematical calculations: the square root of two (provided along the diagonal of the square, running left-right), as well as the Pythagorean Theorem, which is utilized in creating the answer along the bottom.

Except for geometry (for which Egypt enjoys pride of place), Babylonian mathematicians in the early 1000s BC developed the most advanced mathematics of any ancient society. Babylonian mathematicians were very much reliant upon their Sumerian predecessors of the 2000s BC. Babylonians used cuneiform, the concept of place value, as well as the base 60 (*sexagesimal*) number system—all of which the Sumerians used. Babylonian mathematicians receive credit for the following calculations:

1. Pythagorean Theorem (the square of a side opposite a right angle is equal to the square of the other two sides) was used in numerous instances: (a) tablets which presents a problem, and then work out the solution using the PT; (b) a list of “Pythagorean Triplets,” rows of numbers that would be all three sides of a right triangle; (c) a tablet that gives a side of a right triangle, and the square root of two, and then a third number, which is the *hypotenuse* found by multiplying those first two numbers.
2. The square root of two ($\sqrt{2}$) to the fifth decimal place. This wasn’t seen elsewhere until the *Salbasutra* in India (at least 1000 years later than at Babylon), which also calculated the square root to this degree of accuracy.
3. The value of π (correct to the first decimal place). This mathematical accomplishment must be shared with Egypt, as well as the Indian *Salbasutra* (1000 years after the records in Egypt and Babylon), as well as Archimedes (who worked out the value of π correct to the second decimal place).

In order to help them, these scribes had special tables—not only for the numbers 1-20, 30, 40, and 50 (the only ones necessary in a base 60 system), but also for special operations (such as n^3+n^2). They also had terms for *length*, *breadth*, *height*, *square*, *area*, and *volume*.