Physics: from Pythagoras to Quantum Mechanics

1557: \( h^2 = x^2 + y^2 \)

1905: \( h^2 = + x^2 + y^2 + z^2 - t^2 \)

\[
\begin{align*}
   h^2 &= \left( \frac{x^2}{1 - \frac{2m}{x}} \right) + 0^2 + 0^2 - \left( 1 - \frac{2m}{x} \right) t^2 \\
   1917: \quad \text{a point-mass} \ m \ \text{is at} \ x = 0
\end{align*}
\]

In ancient times, Pythagoras (pictured !) promulgated his Theorem: that, for a right-angled triangle the square on the hypotenuse [that is the sloping side !] is equal to the sum of the squares on the other two sides.

In 1557, Robert Recorde of Wales, Oxford, & Cambridge, invented the equals sign, making it possible, for the first time, to write the famous Pythagorean Theorem as an EQUATION.

\~ 1905, the Pythagorean Theorem was found by Albert Einstein and Hermann Minkowski to be extensible (a minus sign!) to include time.

In 1917, Albert Einstein discovered that MASS distorts spacetime. The separation \( h \) of two points is determined by the equation shown, for the case of a person who is on the \( x \) axis and is distant by an amount \( x \) from a point mass \( m \) that is located right at the origin of coordinates: \( x = 0 \).

In 1925, Quantum Mechanics was discovered, revealing that matter is dramatically different from how it appears to us. And then, in 1990, Richard Conn Henry discovered Quantum Mechanics is a necessary consequence of the observed, highly symmetric, structure of spacetime.

High School Algebra is the language that governs the Universe. Learn it!