Albert Einstein explained **WHY GEOMETRY** won’t let us go any faster than light!

Pythagorean Theorem’s *proof*

*Visual proof* of the Pythagorean theorem: the two BIGGEST squares are the same size. Also, all **8** blue triangles are identical, and they therefore have identical areas.

So, if you take **4** blue triangles away from each of the two BIG squares, the areas that are left must be **exactly** the same in each!

**AND SO** at long last (in 1905) the **great discovery** by **Albert Einstein** of his **RELATIVITY**:

**CONSTANT-MOTION invariance:**

\[(d\alpha^2 + d\beta^2 + dy^2) - d\tau^2 = (dx^2 + dy^2 + dz^2) - dt^2\]

Twice, ♥ *snaps her fingers!* — as first ♠, and, later, ♦, see ♥ *move dx at constant v*:

♥-moves at v ⇒ \[0 + 0 + 0 = dx^2 + 0 + 0 = dt^2\] ← ♠ & ♦ both **stationary** in x, y, z

\[d\tau^2 = dt^2 - dx^2 \div ♥'s \text{ time slows!} \]

But \[dx = v \, dt\] and so \[d\tau^2 = dt^2(1 - v^2)\] and \[v \leq 1\]

The square of any number is **positive**! If \[v\] were larger than 1, the equation’s right-hand side would be **negative** and so could not be equal to the left hand side! So there is a **speed limit**!

*Algebra* claims that velocities must be **≤ 1** [(just like you can’t go north of the North Pole)!]

LIGHT does move at \(v = 1\) **light-year/year** \[\therefore d\tau = 0 \div \text{for LIGHT NO time ever passes!}\]

Experiment with particle accelerators shows: We **can** force huge energies onto particles—

**BUT**, we **CANNOT** make them go faster than 1 light-year per year: **Einstein-proven-right!**

A Pythagorean **MINUS SIGN** gives **TIME** ← **Human-invented** **ALGEBRA**: is miraculous!