Basic formulas of Einstein's theory of relativity

$\Delta t = \gamma \Delta t_o$	time dilation
$L = L_o / \gamma$	length contraction
$m = \gamma m_o$	mass change
$K.E. = m_o c^2 (\gamma - 1)$	relativistic kinetic energy
$V_{net} = (v + U) / (1 + vU/c^2)$	velocity addition law
$E = mc^2$	mass-energy equivalence

where:

Δt_o, L_o, m_o are time, length, and mass in the rest frame

Δt, L, m are time, length, and mass as viewed by an outside observer

$\gamma = (1 - v^2 / c^2)^{-½}$

v = the velocity of the rest frame

U = the velocity of something within the rest frame

c = the speed of light, 3×10^8 meters/second

Extremely Useful Approximation: $(1 + x)^n \approx 1 + nx$ if x is very small.