

$$\Delta x^2 + (c\Delta t)^2 = \Delta X^2 + (c\Delta T)^2.$$
$$\Delta X^2 + (c\Delta t)^2 = \Delta x^2 + (c\Delta T)^2,$$
$$(c\Delta t)^2 - \Delta x^2 = (c\Delta T)^2 - \Delta X^2$$
, which defines the Lorentz transformation.