Lorentz transformations:

\[ x' = \gamma (x - ut) \]

\[ t' = \gamma (t - \frac{u}{c^2} x) \]

Inverse Lorentz transformations:

\[ x = \gamma (x' + vt') \]

\[ t = \gamma (t' + \frac{v}{c^2} x') \]

\[ x_1 - x_2 = \gamma (x_1' - x_2') \quad \text{for} \quad t_1' = t_2' \]

(Length-Frequency Contraction)
II. Analogously, using now direct Lorentz transformations

\[ t'_1 - t'_2 = \gamma (t_1 - t_2) \text{ for } x_1 = x_2 \]

(time dilation)