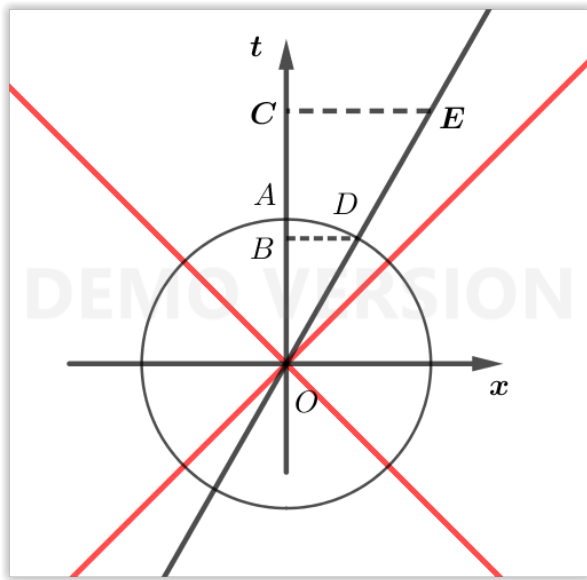




$$\begin{cases} t^2 + x^2 = 1 & (1) \\ x = \frac{v}{c}t & (2) \\ t = t_D & (3) \\ x = x_D & (4) \end{cases}$$

$$\begin{cases} t_D = \frac{1}{\sqrt{1 + \frac{v^2}{c^2}}} & (5) \\ OE^2 = \frac{t_E^2}{t_D^2} = \left(1 + \frac{v^2}{c^2}\right) t_E^2 = t_E^2 + x_E^2 & (6) \end{cases}$$

$$\boxed{OE^2 = t_E^2 + x_E^2} \quad (7)$$