

01)

$\vec{v} = v \hat{x}$



$$D) \quad \vec{v} = v \hat{x} \quad \Rightarrow \quad \vec{v} = \begin{pmatrix} v \\ 0 \\ 0 \end{pmatrix} \quad \Rightarrow \quad \vec{v} = \begin{pmatrix} \beta c \\ 0 \\ 0 \end{pmatrix}$$



$$L' = L \sqrt{1 - \beta^2}$$

$$x' = \gamma (x - vt)$$

$$t' = \gamma (t - \frac{v}{c^2} x)$$

$$x = \gamma (x' + vt')$$

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

$$z' = z$$

$$t' = \gamma (t - \frac{v}{c^2} x)$$

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

$$L' = L \sqrt{1 - \beta^2}$$

$$L = L' \gamma$$











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