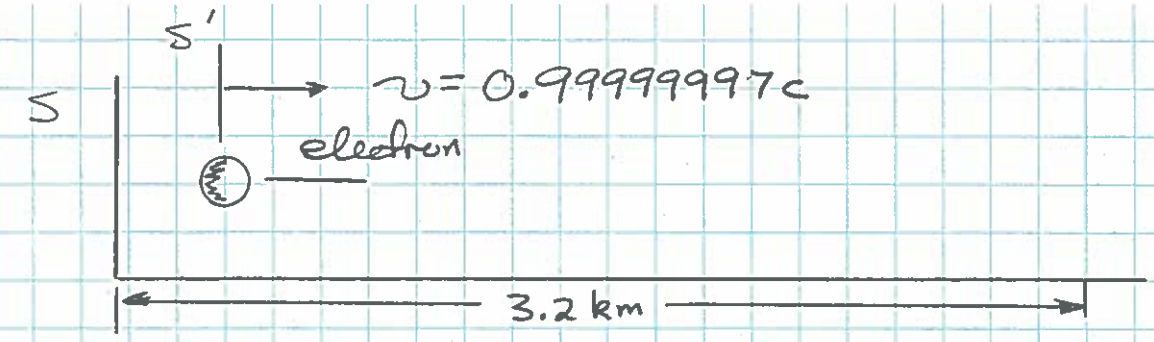

On S, Proper length of accelerator $L_p = 3.2\,km = 3.2 \times 10^3\,m$

On S': length is contracted:

$$L = \frac{1}{\gamma} L_p$$

$$\gamma = \frac{1}{\sqrt{1 - v^2/c^2}} = 4082.5$$

So:

$$L = 0.784\ m = 78.4\ cm$$