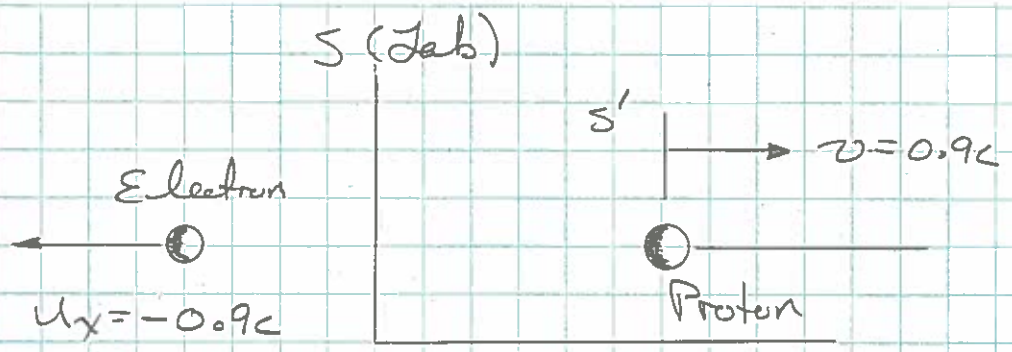

Want: u_x measured in frame S'

Lorentz Velocity Transformation:

$$u_x' = \frac{u_x - v}{1 - \frac{v u_x}{c^2}} = \frac{-0.9c - 0.9c}{1 - \frac{(.9c)(-.9c)}{c^2}}$$

$$= \frac{-1.8c}{1 + .9^2}$$

$$u_x' = -0.994c$$

$\therefore$ speed = $0.994c$