- An electron and a positron are .... opposite dir... 0.5 c and 0.7 c ... Find the speed of the ~~elect~~ positron when observed in the electrons ref.

⇒ This is too much info but i find if i don't state all my symbols i get errors:

let S, S', S'' be the R.F

S → lab, S' → e, S'' → p

thus u denotes the speed of e WRT Lab.

u' 〃 〃 〃 〃 〃 〃 e . **zero**

u'' 〃 〃 〃 〃 〃 〃 p .

and the accents carry on to other symbols

1) we have u ^ v we need to find v' ← velocity of positron (← elec. R.F)

> u here! not v

$$v' = \frac{dx'}{dt'} : \quad dx' = \gamma(dx - u\,dt)$$
$$dt' = \gamma\left(dt - \frac{u}{c^2}dx\right)$$

in this step we are transfering from lab to E or S'

→ now "division":

$$\frac{dx'}{dt'} = \frac{dx - u\,dt}{dt - \frac{u}{c^2}dx} = \frac{\frac{dx}{dt} - u}{1 - \frac{u}{c^2}\frac{dx}{dt}} = \boxed{\frac{v - u}{1 - \frac{uv}{c^2}}}$$

rember that v, u are ~~the~~ WRT S and are given;

$v = -0.7c$ $u = 0.5c$

(opposite dir. vel. ...)

$$\Rightarrow \frac{-1.2}{1+0.35}c \;\boxed{= -0.88\,c} \rightarrow \text{soln}$$

↳ goes in the neg. x. axis of S'