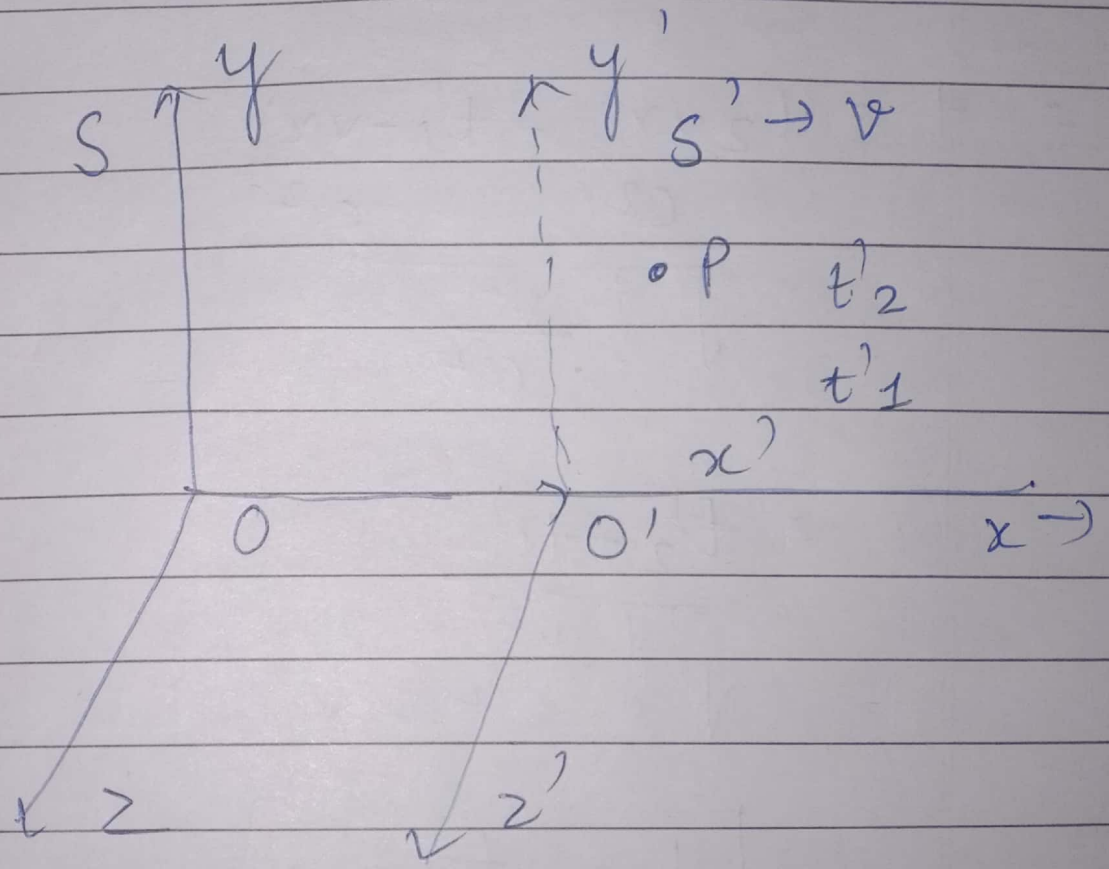
(Section-4)

Ques1- Time dilation :-

The moving clock is found to run slower that a clock at Rest does.



S → Rest frame (I.f.)

S' → moving frame (I.f.)

(t'_1, t'_2) be the times of occurence of two events measured By the clock in frame S' & to be the

corresponding Time interval

$$t_0 = t_2' - t_1'$$

$(t_1, t_2) \rightarrow S$

$$t = t_2 - t_1$$

$$t = \frac{t_2' + vx'/c^2 - \left(t_1' + vx'/c^2\right)}{\sqrt{1 - v^2/c^2}}$$

$$\therefore t = \frac{t_2' vx'/c^2 - t_1' - vx'/c^2}{\sqrt{1 - v^2/c^2}}$$

$$= \frac{t_2' - t_1'}{\sqrt{1 - v^2/c^2}}$$

$$t = \frac{t_0}{\sqrt{1 - v^2/c^2}}$$

↓

Time dilation Eq^n