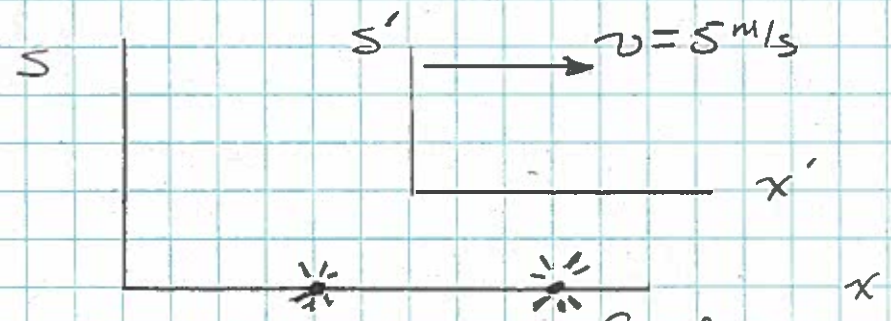

On frame → Event 1 Event 2

S $(x_1 = 10\text{m}, t_1 = 1\text{s})$ $(x_2 = 20\text{m}, t_2 = 5\text{s})$

Inverse Galilean Transformation:

$$x' = x - vt$$
$$t' = t$$

So,

Event 1 $x_1' = x_1 - vt_1 = 10 - 5 = 5\text{m}$

$t_1' = t_1 = 1\text{s}$

$$(x_1', t_1') = (5\text{m}, 1\text{s})$$

Event 2 $x_2' = x_2 - vt_2 = 20 - (5)(5) = -5\text{m}$

$t_2' = t_2$

$$(x_2', t_2') = (-5\text{m}, 5\text{s})$$