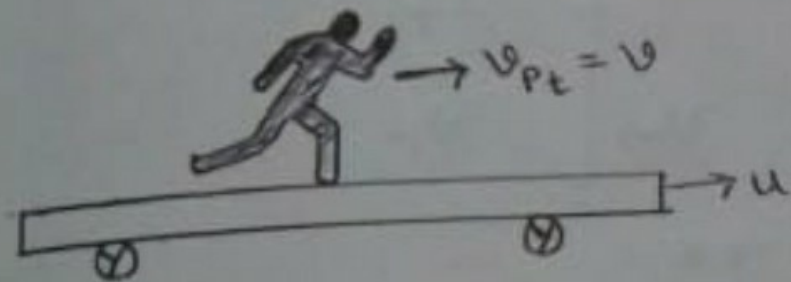


(ii) Motion of a person on a moving trolley

$v_t = u$ - Velocity of trolley w.r.t the ground.

$v_{pt} = v$ - Velocity of the person w.r.t. the trolley.



$$\vec{v}_t = u \hat{i}, \quad \vec{v}_{pt} = \vec{v}_p - \vec{v}_t = v \hat{i}$$

$$\vec{v}_p = \vec{v}_{pt} + \vec{v}_t = (u+v) \hat{i}$$



$$\vec{v}_t = u \hat{i}, \quad \vec{v}_{pt} = -v \hat{i}$$

$$v_p = \vec{v}_{pt} + \vec{v}_t = (u-v) \hat{i}$$