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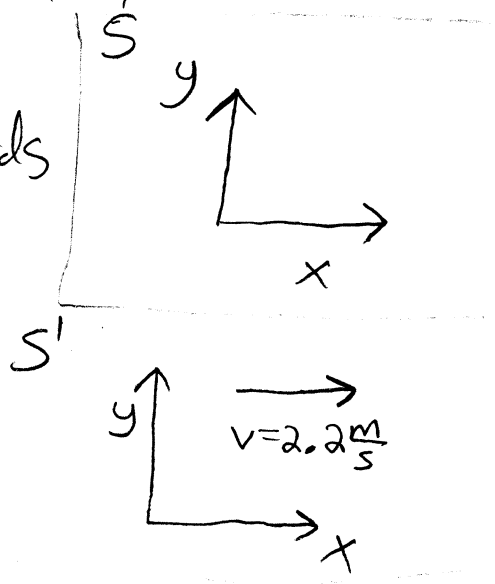
Let S be Frame of reference of airport &
S' be Frame of reference of people mover.



(a) In S', $v_0 = 0$

So $\boxed{\Delta \vec{y}' = -1.6\text{m} \downarrow}$

$$\vec{v}_{av} = \frac{\Delta \vec{y}'}{\Delta t} = \frac{-1.6\text{m}}{.57\text{s}} = -2.81 \frac{\text{m}}{\text{s}}$$

$$\boxed{\vec{v}_{av} = -2.81 \frac{\text{m}}{\text{s}} \downarrow}$$

(magnitude $= 2.81 \frac{\text{m}}{\text{s}}$, direction is down)

(b) In S $\quad v_0 = 0 + 2.2 \frac{\text{m}}{\text{s}} \hat{\imath} = 2.2 \frac{\text{m}}{\text{s}} \uparrow$

$$\Delta \vec{y} = -1.6\text{m} \downarrow$$

$$\Delta \vec{x} = \left(2.2 \frac{\text{m}}{\text{s}}\right)(.57\text{s}) \uparrow \qquad \Delta \vec{x} = 1.25\text{m} \uparrow$$

So net displacement $= \Delta \vec{r} = 1.25\text{m} \uparrow - 1.6\text{m} \downarrow$

$$|\Delta \vec{r}| = \sqrt{1.25^2 + 1.6^2} = 2.03\text{m}$$

$$\vec{v} = \frac{\Delta \vec{r}}{\Delta t} = \frac{1.25\text{m}\,\hat{\imath} - 1.6\text{m}\,\hat{\jmath}}{.57\text{s}} = 2.20 \frac{\text{m}}{\text{s}} \uparrow - 2.8 \frac{\text{m}}{\text{s}} \downarrow$$

$$|\vec{v}| = \sqrt{2.20^2 + 2.8^2} = 3.57 \frac{\text{m}}{\text{s}}$$

each in same direction $\quad \theta = \tan^{-1}\left(\frac{-1.6}{1.25}\right) = -51.9^\circ$ From horizontal