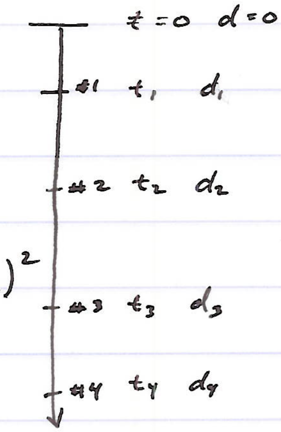
Calculating acceleration between pt. 2 & 3:



Eq. 1: $\Delta x = V_i t + \frac{1}{2} \vec{a} t^2$

$$(d_3 - d_2) = \left(\frac{d_2 - d_1}{t_2 - t_1}\right)(t_3 - t_2) + \frac{1}{2} \vec{a} \, (t_3 - t_2)^2$$

Eq. 2: $$\frac{\left(\frac{d_3 - d_2}{t_3 - t_2}\right) - \left(\frac{d_2 - d_1}{t_2 - t_1}\right)}{(t_3 - t_2)} = \vec{a}$$

$$(d_3 - d_2) - \left(\frac{d_2 - d_1}{t_2 - t_1}\right)(t_3 - t_2) = \frac{1}{2} \vec{a} \, (t_3 - t_2)(t_3 - t_2)$$

$$2 \cdot \left[\frac{(d_3 - d_2)}{(t_3 - t_2)(t_3 - t_2)} - \frac{\left(\frac{d_2 - d_1}{t_2 - t_1}\right) \cancel{(t_3 - t_2)}}{\cancel{(t_3 - t_2)}(t_3 - t_2)} \right] = \vec{a}$$

$$2 \cdot \left[\frac{\frac{(d_3 - d_2)}{(t_3 - t_2)} - \left(\frac{d_2 - d_1}{t_2 - t_1}\right)}{(t_3 - t_2)} \right] = \vec{a}$$

Why is the kinematic equation $\Delta x = V_i t + \frac{1}{2} \vec{a} t^2$ 2 times greater than the $\frac{\Delta v}{\Delta t}$ method?