Acceleration + Displacement

Constant Velocity: $v = \frac{\Delta d}{\Delta t}$

Constant Acceleration: $v_{ave} = \frac{\Delta d}{\Delta t}$ (where $v_{ave} = \frac{v_1 + v_2}{2}$)

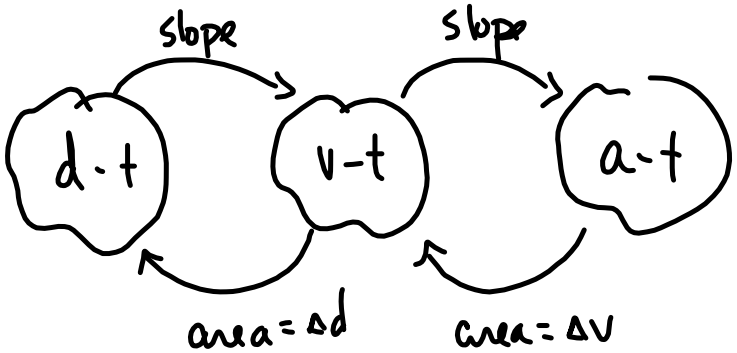
$a = \frac{\Delta v}{\Delta t}$ (where $\Delta v = v_2 - v_1$)

Maybe Useful

① $\Delta d = v_1 t + \frac{1}{2} a t^2$

② $\Delta d = v_2 t - \frac{1}{2} a t^2$

③ $v_2^2 = v_1^2 + 2a\Delta d$



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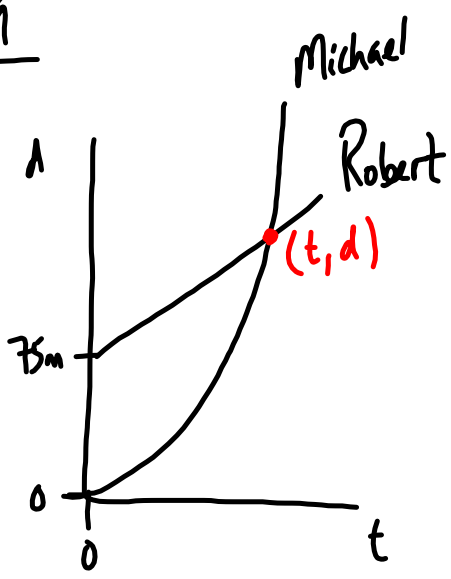

Robert (constant velocity)

$V = 4.2 m/s$

$$v = \frac{\Delta d}{\Delta t}$$

$$\Delta d = v \Delta t$$

$$d - 75 = 24(t - 0)$$

$$d - 75 = 24t$$

$$d = 24t + 75$$

$y = mx + b$

Velocity, Start. position

Michael (constant acc)

$a = 0.15 m/s^2$

$V_1 = 3.8 m/s$

$$\Delta d = V_1 t + \frac{1}{2} a t^2$$

$$d = 3.8t + \frac{1}{2}(0.15)t^2$$

$$d = 3.8t + 0.075t^2$$

$$3.8t + 0.075t^2 = 24t + 75$$

$$0.075t^2 - 20.2t - 75 = 0$$

To DO:

① Reaction Time dropping a metre stick

Δt = ?

Δd = measure (-)

$v_1 = 0$

$a = -9.81 m/s^2$

② Popper Physics