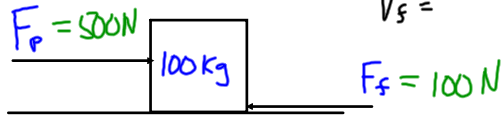
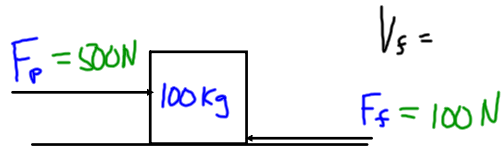
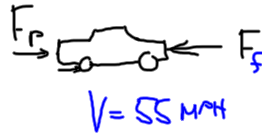
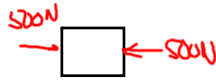


$$V_i = 0 \text{ m/s}$$



$$\Delta t = 5 \text{ s}$$

$$\Delta d = ?$$



$$\sum F'_s = ma_x$$

$$+500 \text{ N} - 100 \text{ N} = (100 \text{ kg}) a_x$$

$$\frac{400 \text{ N}}{100} = \frac{100 \text{ kg}}{100} (a_x)$$

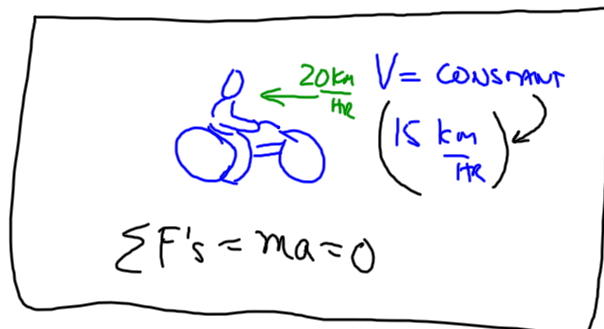
$$a_x = 4 \text{ m/s}^2$$

$$a = \frac{V_f - V_i}{\Delta t}$$

$$V_f = 20 \frac{\text{m}}{\text{s}}$$

$$\frac{\Delta d}{\Delta t} = V_{ave} \quad V_{ave} = \frac{V_f + V_i}{2} \quad \left. \begin{array}{l} \\ \end{array} \right\} \text{when } a = \text{constant}$$

$$\Delta d = 10 \text{ m/s} (5 \text{ s}) = 50 \text{ m}$$



$$\frac{500 \rightarrow 100 \leftarrow 100}{\underline{\hspace{1.5cm}}}$$

$$d = \frac{1}{2}at^2 \quad F = ma$$

$$d = \frac{1}{2}(4) \frac{400}{100} = \frac{1000}{100}$$

$$d = 2.8 \quad 4 = \frac{a}{\text{m/s}^2}$$

$$d = 50 \text{ meters}$$