

$$v_i = 0$$

$$d = ?$$

$$t = 4s$$

$$a = 0.2 \text{ m/s}^2$$



$$3N$$

$$F_{\text{net}} = ma$$

$$3 = 15a$$

$$3/15 \rightarrow a =$$

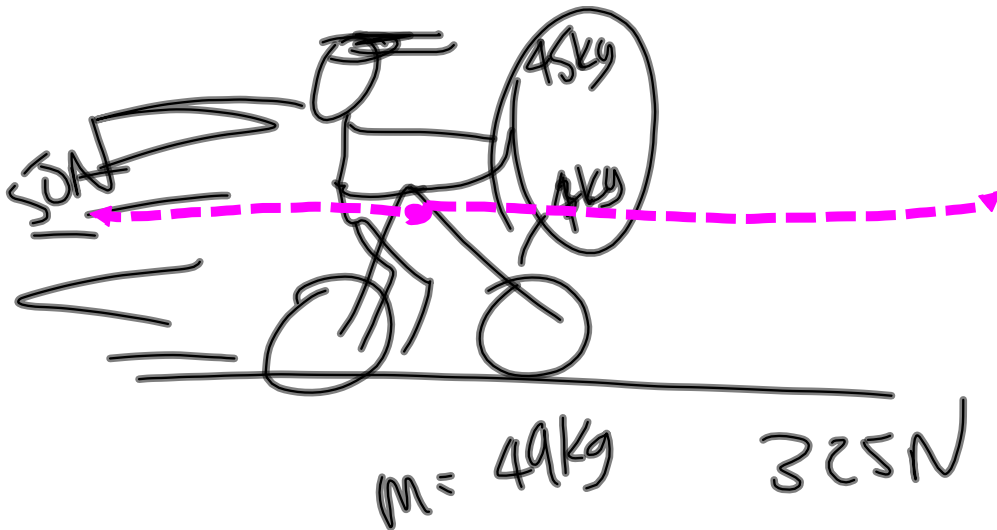
$$v_i$$
$$v_f$$
$$a$$
$$t$$
$$d$$

$$0.2 \text{ m/s}^2$$

$$d = \cancel{v_i t} + \frac{1}{2} a t^2$$

$$= \frac{1}{2} (0.2) (4)^2$$

$$= (0.1) (16) = 1.6 \text{ m}$$



$$F_{net} = 275N$$

$$m = 49kg$$

$$a =$$



$$F_{net} = m a$$

$$a = \frac{F_{net}}{m} = \frac{275N}{49kg}$$

$$a = 5.6m/s^2$$

$$v_i = 3m/s$$

$$= 5.6m/s^2$$

$$d =$$

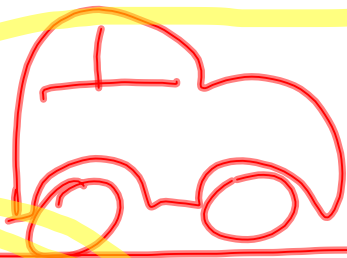
$$t = 8s$$

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

$$= (3)(8) + \frac{1}{2} (5.6)(8)^2$$

$$= 24 + (2.8)(64)$$

$$= 203.2m$$



$$m = 1.2 \times 10^3 \text{ kg}$$
$$v_i = 45 \text{ km/h} = 12.5 \text{ m/s}$$
$$d = 35 \text{ m}$$

$$F_f = \mu F_N \Rightarrow \mu = \frac{F_f}{F_N}$$

$$F_N = F_g = mg$$
$$= (1.2 \times 10^3)(9.8 \text{ m/s}^2)$$
$$= 11.76 \times 10^3$$

$$\mu = \frac{F_f}{11.76 \times 10^3}$$

$$F_{\text{net}} = ma$$

$$F_f = F_{\text{net}} = ma$$

$$F_f = ma$$

$$F_f = (1.2 \times 10^3)(a)$$

$$= (1.2 \times 10^3)(-2.23)$$

$$= -2.68 \times 10^3$$

$$\mu = \left| \frac{-2.68 \times 10^3}{11.76 \times 10^3} \right|$$

$$\mu = 0.23$$

$$a = ?$$

$$v_i = 12.5 \text{ m/s}$$

$$d = 35 \text{ m}$$

$$v_f = 0$$

$$v_f^2 = v_i^2 + 2ad$$

$$0 = (12.5)^2 + 2a(35)$$

$$0 = 156.25 + 70a$$

$$-156.25 = 70a$$

$$\frac{-156.25}{70} = a = -2.23 \text{ m/s}^2$$

$$V_f = ?$$

$$V_i = 0$$

$$F_{\text{net}} = 39 \text{ N}$$

$$m = 0.2 \text{ kg}$$

$$d = 0.22 \text{ m}$$

$$V_f^2 = \cancel{V_i^2} + 2ad$$
$$= 2(195)(0.22)$$

$$V_f^2 = \sqrt{85.8}$$

$$= 9.26 \frac{\text{m}}{\text{s}}$$

$$F = ma$$

$$a = \frac{F}{m} = \frac{39}{0.2}$$

$$= 195 \frac{\text{m}}{\text{s}^2}$$