

$\text{friction} \rightarrow v$ (Combination formula (t_{start}, v_0 , etc))

$\rightarrow T_{\text{start}}$ (Hence)

$$1. F_s = 13500 \text{ N} = 2 \text{ mg}$$

$$m = 1377.6 \text{ kg} \quad V = 13.9 \text{ m/s}$$

$$\text{a) } \frac{13500}{2000} = 9.7 \text{ m/s}^2$$

$$\text{Slope} / h \quad \frac{1000}{310}$$

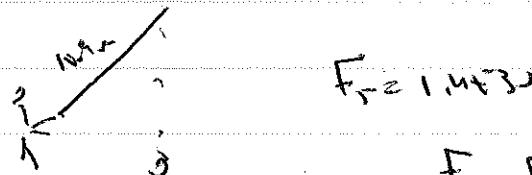
Ans

$$\text{b) } F_c = 1336.3 \text{ N}$$

$$\text{c) } 1336.3^2 = m(13500)$$

$$0.99 = \mu$$

2.



$$v = 6.32 \text{ m/s}$$

$$F_r - F_s = F_c$$

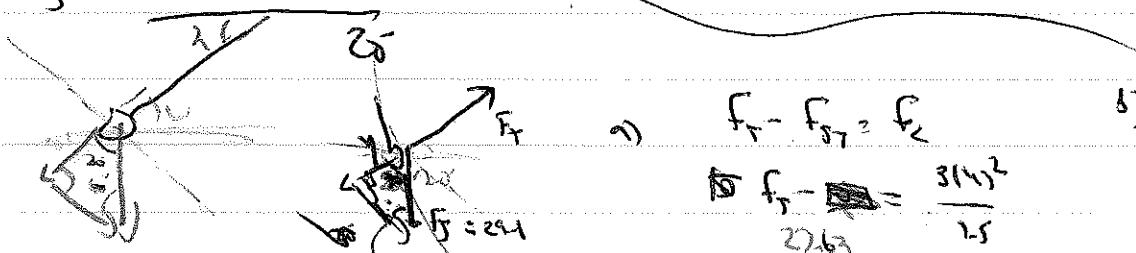
$$1400 - mg\mu = \frac{m(13.2)^2}{12}$$

$$1400 - mg\mu = 6.35 \text{ m}$$

$$1400 = 16.15 \text{ m}$$

$$86.7 \text{ kg} = m$$

$$\frac{mg}{3}$$



$$F_r = F_c = \frac{mv^2}{r}$$

$$27.63 \text{ m}$$

$$\text{d) } F_r - F_{s7} = F_c$$

$$1400 - \cancel{f_r} = \frac{314^2}{20}$$

$$27.63 = 32$$

$$f_r + \cancel{f_r} = F_c$$

$$mg = \frac{mv^2}{r}$$

$$v = \sqrt{gr}$$

$$\frac{1400(1.5)}{27.63} = \sqrt{3.14 \times 20}$$

$$\text{e) } v = \sqrt{\frac{rm}{m}} = \sqrt{\frac{(6.32)(13.2)}{1400 + 4.761}}$$

$$V = 27.63 \text{ m/s}$$

$$v = 27.63$$

$$T = 122,197.1 \text{ s}$$