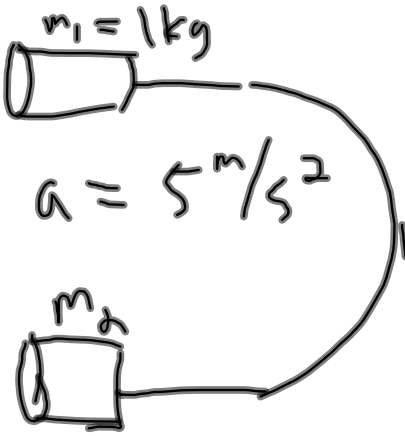


$$F_{net} = ma = \sum F$$

$a = 11\,m/s^2$

$F_1 = F_2 = F_{rubberband}$

$m_1 a_1 = m_2 a_2$

$m_2 = \frac{m_1 a_1}{a_2}$

1) $5\,kg\,m/s^2 \cdot 1kg = 5\,kg\,m/s^2 = 5\,N$

2) $\frac{5N}{11} = m_2 a_2 = m_2 \frac{11\,m}{s^2}$

$m_2 = \frac{5}{11}\,kg$

$\vec{F}$ = constant (a = constant)

$m = 68\ kg$

$t = 3.0\ s$

find $\vec{F}$

$|\Delta \vec{r}| = 2.25\ m$

$\vec{a} = ?$

$\Delta \vec{r} = \cancel{\vec{v}_0 t}^{\,0} + \frac{1}{2}\vec{a}t^2$

$2.25\ m = \frac{1}{2}a(9) = 4.5a$

$a = \frac{2.25\ m}{4.5\ s^2} = \frac{1}{2}\ m/s^2$

$F_{net} = ma$

$F_{net} = (68)(\frac{1}{2})$

$F_{net} = 34\ N$

0.400 kg

$\vec{F}_1 = -2\ N(\hat{i}) - 4\ N(\hat{j})$

$\vec{F}_2 = -2.6\ N(\hat{i}) + 5\ N(\hat{j})$

$\vec{a}$?

$V_0 = 0$

at origin $(0,0)$

$t = 0$

$\vec{r} = ?$

$\vec{V} = ?$ @ $t = 1.6s$

$\vec{F}_{net} = m\vec{a}$

$$\frac{-4.6\ N(\hat{i}) + 1\ N(\hat{j}) = ma = .4a}{.4}$$

$$-11.5\ N(\hat{i}) + 2.5\ N(\hat{j}) = \vec{a}$$

$\vec{V} = \vec{a}t$ $\quad \vec{V} = -11.5(t)\hat{i} + 2.5(t)\hat{j}$

$\vec{r} = \frac{1}{2}\vec{a}t^2$ $\quad \vec{r} = \left(\frac{1}{2}\right)(-11.5)(t^2)\hat{i} + \frac{1}{2}(2.5)(t^2)\hat{j}$

$F_{net} = 25\,lb = ma$

$a = ?$

$F_g = 130\,lb = mg = m(32.2\,ft/s^2)$

$m = \frac{130\,lb}{32.2}$

$= 4.04\,lb_m$ or slugs

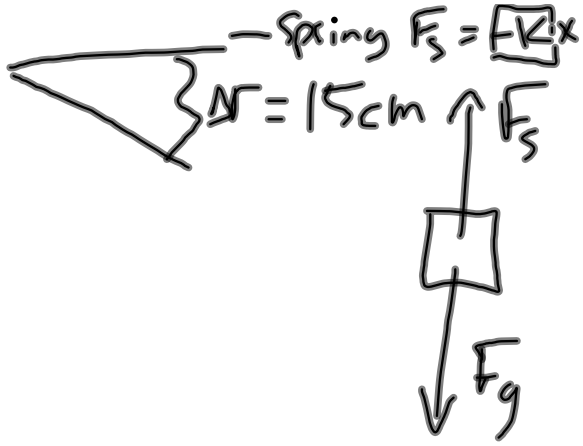
$a = \frac{25\,lb_f}{4.04\,lb_m} = 6.19\,ft/s^2$

$F_g = 5\,lb$ block $\qquad a = 3\,ft/s^2$

$m = \frac{5}{32.2} \qquad F_{net} = ?$

$F_{net} = \frac{15}{32.2}\,lb$

$m = 110\ kg$



$$F_g = F_s$$

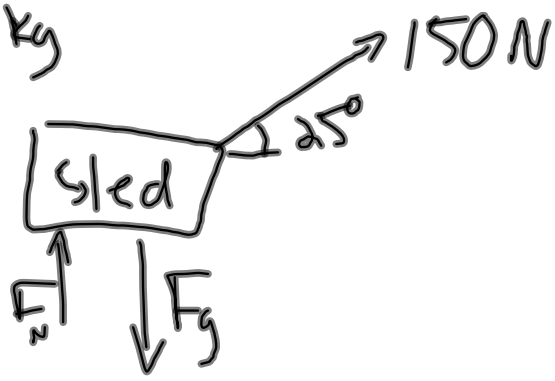
$$mg = -kx$$

$$\frac{-(9.81)(110) = -k(.15)}{.15}$$

$$k = 7194 \left[\frac{N}{m}\right] \left[\frac{kgm}{s^2}\right]$$

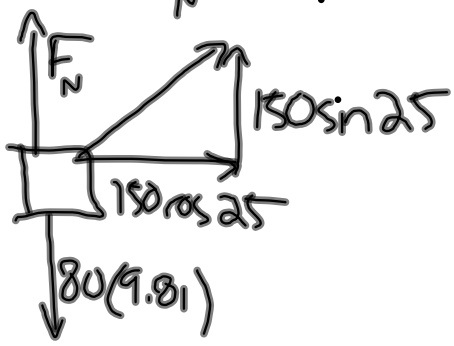
$$= kg/s^2$$

$m = 80\ kg$



$a = ?$

$\overline{F_N} = ?$



$\hat{i}$	$\hat{j}$
135.95	$F_N \uparrow$
	$-784.8 \downarrow$
	$63.39 \uparrow$
	$= 0$

$F_{net} = 135.95\hat{i}$

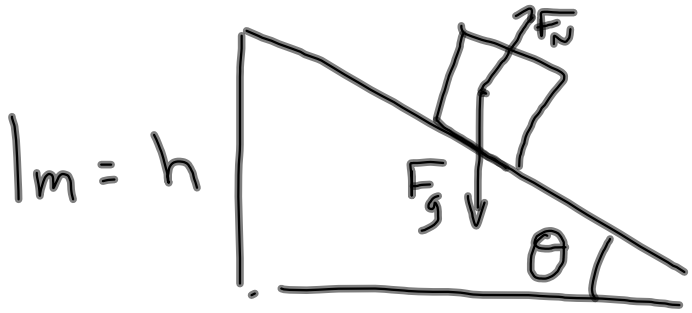
$= m(\vec{a})$

$a = \frac{135.95}{80} = 1.7\ m/s^2$

$63.39 + F_N - 784.8 = 0$

$F_N = 784.8 - 63.39$

$= 721.41\ N$

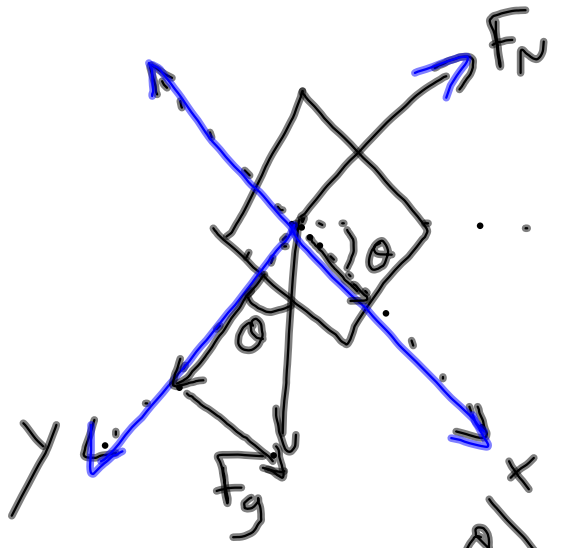


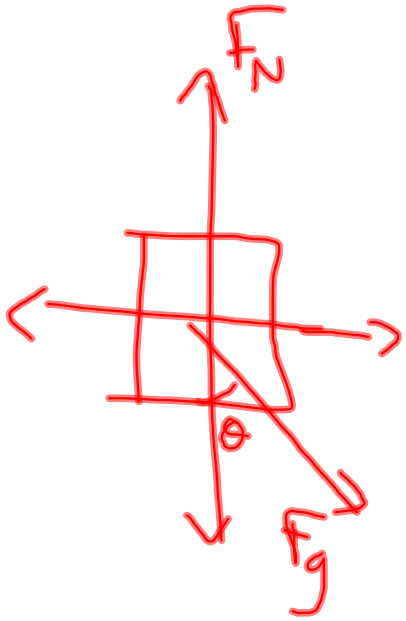
$l_m = h$

$V_a > 2.5\ m/s$

Package Breaks

$\theta_{max} = ?$





i	j
$F_g \sin\theta$	$-F_g \cos\theta$
	F_N
	0

$F_N = F_g \cos\theta$

$F_{net} = F_g \sin\theta = ma$

$V_a = V_0 \sin\theta$

$2.5 = V_{ox} \sin\theta$

$V_a = ?\ 2.5\ m/s$