

Do you Remember?

$$\mu_s = \frac{f_s}{N}$$

$$\mu_k = \frac{f_k}{N}$$

18.

$N = +30\text{N}$
 $W = -30\text{N}$
 $\Sigma F_{\text{sys}} = ma = 0$
 $W - f_s = 0$
 $+20\text{N} - \mu_s(+30) = 0$
 $20 = \mu_s 30$
 $\frac{2}{3} = \mu_s$
 $.67 = \mu_s$

a) $\mu_s = ?$
 for $v = 0$
 ↓ + dir.

$W = +20\text{N}$
 2m

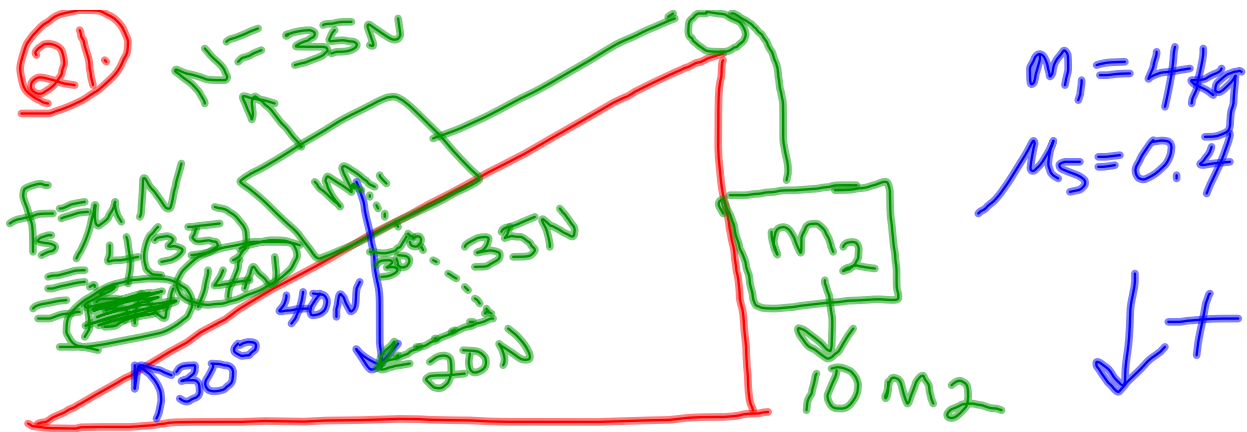
$\mu = \frac{f}{N}$
 $f = \mu N$

b) $v_i = 0$
 $\Delta y = -2 \text{ m}$
 $\mu_k = 0.3$
 $\Delta t = ?$

$f_k = (0.3)(30) = 9.0 \text{ N}$

$\Sigma F_{\text{sys}} = ma$
 $W_2 + f_k = m_{\text{sys}} a$
 $20 - 9 = 5a$
 $11 = 5a$
 $2.2 \text{ m/s}^2 = a$

$S = S_0 + v_0 t + \frac{1}{2} a t^2$
 $\Delta S = \frac{1}{2} a t^2$
 $\frac{2\Delta S}{a} = t^2$
 $t = \sqrt{\frac{2\Delta S}{a}}$
 $t = \sqrt{\frac{2(+2)}{2.2}}$
 $t = \underline{1.3 \text{ sec}}$



if $m_2 > m_1$, $\leftarrow f_s$
 if $m_2 < m_1$, $\rightarrow f_s$

$$\Sigma F_{\text{sys}} = 0$$

$$\underline{10m_2} - \underline{20} \pm 14 = 0$$

$$+ : 10m_2 - 6 = 0 \quad m_2 = 0.6$$

$$- : 10m_2 - 34 = 0 \quad m_2 = 3.4$$

part b: 10 Newtons

Do number 22 of
chapter 5 for Homefun. I
will collect it in class!