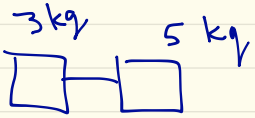
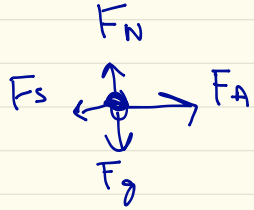
REMINDERS

- Quiz tomorrow (Thursday) – there will be no pulley question
- Unit Test – Monday, October 31
- Read Sections 4.4 and 4.5 (pages 179 – 188)
  - Fair game for MC questions on test
- A few questions to prepare for quiz
  - Pg. 200 # 34, 36-38
- Test prep

Quiz #3.



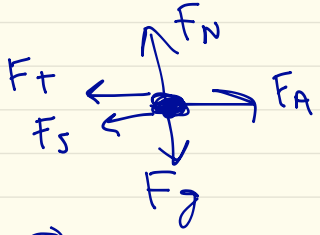
a) $\mu_s = \frac{F_s}{F_N}$



$= \frac{31.4\,N}{(8\,kg)(9.8\,m/s^2)}$

$\mu_s = 0.40$

b) FBD 5 kg



$F_{NET} = 0$

$F_T + F_s = F_A$

$F_T + 19.6N = 31.4\,N$

$F_T = 31.4N - 19.6N$

$F_T = 11.8N$

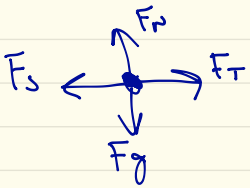
$F_s = \mu_s F_N$

$= (0.40)(5)(9.8)$

$F_s = 19.6\,N$

$F_s \approx 12\,N$

Use 3kg Mass



$F_T = F_S$

$F_T \leq \mu_S F_N$

$= (0.40)(3\,kg)\left(9.8\frac{N}{s^2}\right)$

$F_T = 11.76\,N$

$F_T = 12\,N$

Pg 166 #2

$m = 36\ kg$

a) constant velocity $12\ m/s\ [\uparrow]$

$\rightarrow F_{NET} = 0$

$F_N = F_g$

$F_N = mg$

$F_N = (36\ kg)\left(9.8\ \frac{m}{s^2}\right)$

$F_N = 350\ N\ [\uparrow]$

b) constant velocity $14\ m/s\ [\downarrow]$

$\uparrow F_{NET} = 0$

$\therefore F_N = 350\ N\ [\uparrow]$

c) accelerating down at $1.0\ m/s^2$

$F_{NET} = ma$

$F_{Net} = F_g - F_N$

$F_N = F_g - F_{Net}$

$$F_N = F_g - F_{NET}$$

$$F_N = mg - ma$$

$$F_N = m(g - a)$$

$$F_N = 36\,kg\left(9.8\,m/s^2 - 1.8\,\frac{m}{s^2}\right)$$

$$F_N = (36\,kg)(8\,m/s^2)$$

$$F_N = 288\,N\ [\uparrow]$$

Prep for test!

Reread 4.1

Pg 166 #1, 3, 4