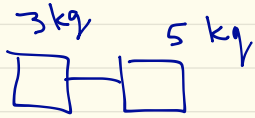


REMINDERS

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

A free body diagram for the 5 kg block. It shows a central dot with four force vectors: F_N pointing up, F_g pointing down, F_A pointing right, and F_s pointing left.

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

$$\mu_s = 0.40$$



$$F_{\text{NET}} = 0$$

$$F_T + F_s = F_A$$
$$F_T + 19.6 \text{ N} = 31.4 \text{ N}$$

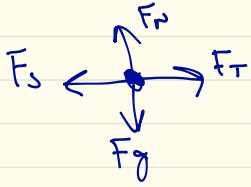
$$F_T = 31.4 \text{ N} - 19.6 \text{ N}$$

$$F_T = 11.8 \text{ N}$$

$$F_s = \mu_s F_N$$
$$= (0.40)(5)(9.8)$$
$$F_s = 19.6 \text{ N}$$

$$F_s = 12 \text{ N}$$

Use 3kg Mass



$$F_T = F_S$$

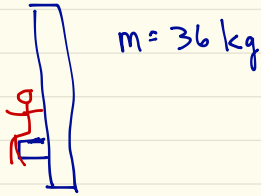
$$F_T < \mu_s F_N$$

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

$$F_T = 11.76\text{ N}$$

$$F_T = 12\text{ N}$$

Pg 166 #2



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

$\downarrow F_{\text{NET}} = 0$



$$F_N = F_g$$
$$F_N = mg$$

$$F_N = (36 \text{ kg})(9.8 \frac{\text{m}}{\text{s}^2})$$
$$F_N = 350 \text{ N} [\uparrow]$$

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

$\uparrow F_{\text{NET}} = 0$



$$\therefore F_N = 350 \text{ N} [\uparrow]$$

c) accelerating down at 1.0 m/s^2

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

A dot representing the person is shown with an upward arrow labeled F_N , a downward arrow labeled F_g , and a shorter downward arrow labeled F_{NET} .

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

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

$$F_N = mg - ma$$

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

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

$$F_N = (36 \text{ kg})(8 \text{ m/s}^2)$$

$$F_N = 288 \text{ N} [\uparrow]$$

Prep for test!

Reread 4.1

Pg 166 #1,3,4