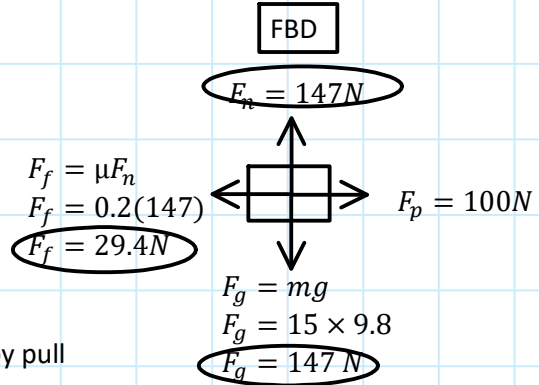
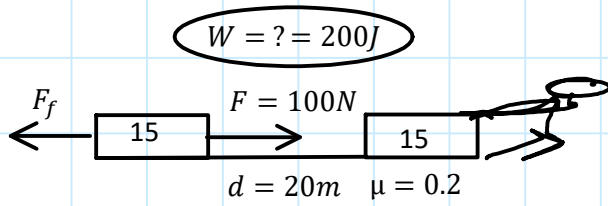


# P11 - 6.4 - Work Trig Notes

What is the work done on an Object with a Force of 100 N over a distance of 20 m.  $\mu = 0.2$



$W_f = Fd$   
 $W_f = 29.4(20)$   
 $W_f = 588J$

$W_p = Fd$   
 $W_p = 100(20)$   
 $W_p = 2000J$

Work by pull

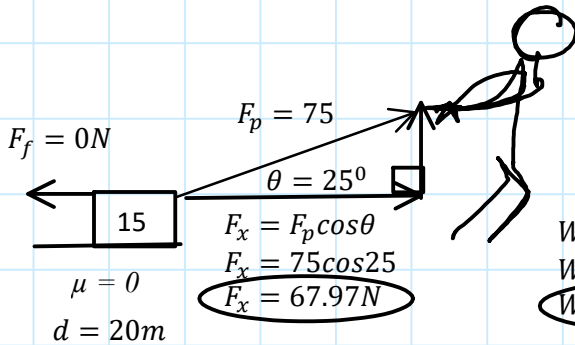
Work by Friction  $W_n = W_p - w_f$   
 $W_n = 2000 - 588$   
 $W_n = 1412J$

Net Work

$F = ma$   
 $F_p - F_f = ma$   
 $100 - 29.4 = 15a$   
 $a = 4.71 \frac{m}{s^2}$

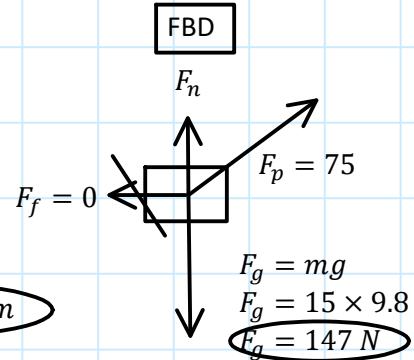
$W_n = Fd$   
 $W_n = mad$   
 $W_n = 15(4.71)(20)$   
 $W_n = 1412J$

Find "W" on an 15kg object with  $F = 75N$  at an angle of  $25^\circ$  see below over a  $d = 20m$ .  $\mu = 0$ .

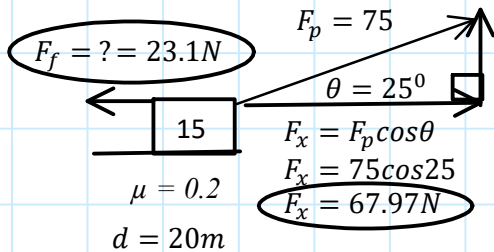


$W = F_{\parallel} d$   
 $W = 67.97(20)$   
 $W = 1359.46 Nm$

Work by Pull



Find Net "W"  $\mu = 0.2$ , see above!



$F_y = F_p \sin \theta$   
 $F_y = 75 \sin 25$   
 $F_y = 31.69$

Logic  $F_n = mg - F_y$   
 $F_n = 147 - 31.69$   
 $F_n = 115.3$

$F_f = \mu F_n$   
 $F_f = 0.2(115.3)$   
 $F_f = 23.1N$

$F = ma$   
 $F_{px} - F_f = ma$   
 $67.97 - 29.4 = 15a$   
 $a = 2.57 \frac{m}{s^2}$

$W_n = Fd$   
 $W_n = mad$   
 $W_n = 15(2.57)(20)$   
 $W_n = 771.46J$

