6.1

1.) $W = F \times d$

$F = 750\ N$

$W = 7{,}500\ N \cdot m$

$7{,}500\ J$

2.) a) $W = 180 \cdot 6$

$= 1080\ J$

b.) $W = 900 \cdot 6$

$= 5400\ J$

3.) $10000\ J = F(2800)$

$F = 25\ N$

4.) $F_{fr} = \mu F_N$

$= .7(1500)$

$= 1050$

$W = 1050\ (12.3)$

$= 12{,}915\ J$

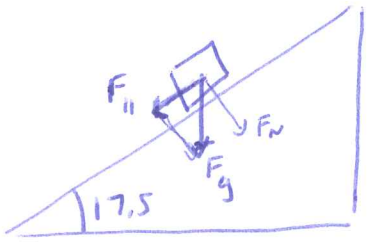
5.) $115\ J = (3.25\ N)\ d$

$d = 35.4\ m$

6.) $W = (20)(.4) = 8\ J$

more Force → more Work

7.)



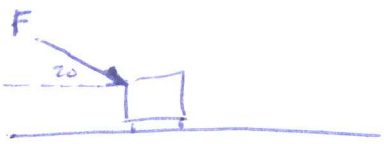
$F_N = F_g \cos(17.5)$

$10000 \cdot (.953)$

$F_N = 9537\ N$

$F_{||} = F_g \sin(17.5) = 3000N$

8.)



$F_H = 12 \cos(20) = 11.3$

$W = (11.3)(15) = 169\ J$

Friction does 169 J of Work

$F_V = 12 \sin(20) = 4.1\ N$

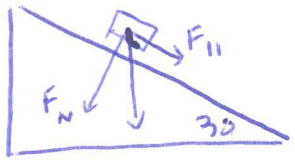
No work done vertically

9.) 2nd Book $W = 18(.046) = .83$

3rd $W = 18(.092) = 1.66$

4th $W = (.83)3) = 2.48$

10.)



$F_g = 2800\ N$

$F_N = F_g \cos(30) = 2424$

$F_{||} = F_g \sin(30) = 1400$

w/o Friction, push at 1400 N

$F_{fr} = (.4)(2424) = 970\ N$

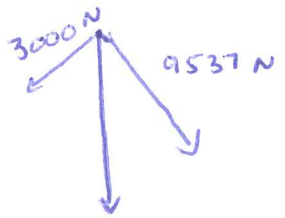
w/ Friction, $1400 - 970 = 430\ N$ most push only 430 N

$W = (430)\ 4.3 = 1849\ J$

c.) $W_{fr} = (970)4.3 = 4171\ J$

d.) $W = (1400)(4.3) = 6020$

e.) Net work = 0



$W = (3000\ N)(300\ m) = 900{,}000\ J$

$F_{fr} = (.25)(9537) = 2384$

b.) $W = (3000 + 2384)(300)$

$= 1{,}615$ million J