

HW p.206 #31, 33, 35, 36

HW #30 $PE_g = m \cdot g \cdot h$

$$PE_{g(\text{moon})} = m \cdot h \cdot \frac{1}{6} g_E$$

$$PE_{g(\text{moon})} < PE_{g(\text{EARTH})}$$

$$g_m < g_E$$

Dec 17-9:04 AM

HW #32 $KE = \frac{1}{2} m \cdot v^2$

$$KE = \frac{1}{2} (0.0095) \left(1,300 \frac{\text{m}}{\text{s}} \right)^2$$

$$KE = 8,027.5 \text{ J}$$

Dec 17-9:26 AM

Work: *Work is a process of transferring energy.*

:

$$W = F \cdot d \cdot \cos \theta$$

F = external force; it's always positive; it's a vector

d = displacement; it's always positive; it's a vector

θ = the angle between the force vector and the displacement vector ($0 \leq \theta \leq 180^\circ$).

- Work is a scalar; it can be negative (taking energy away from the system), zero, or positive (adding energy to the system).

Dec 17-9:29 AM

UNIT OF W :

$$[N \cdot m] = [kg \cdot \frac{m}{s^2} \cdot m] = [kg \frac{m^2}{s^2}] = [J]$$

Dec 17-9:46 AM