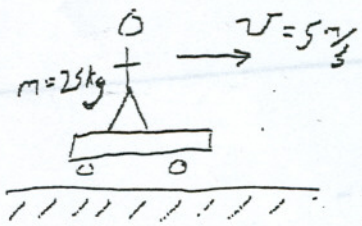
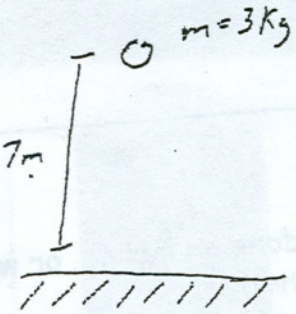
(Review for test)

ENERGY, WORK, POWER SPRINGS, and PENDULUMS

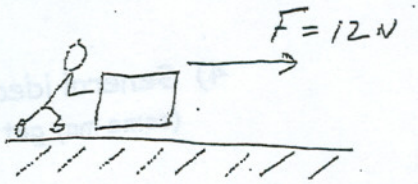
1) Three Basic forms of work energy, What are equations for each form. What are units of energy.



$KE = \frac{1}{2}mv^2$

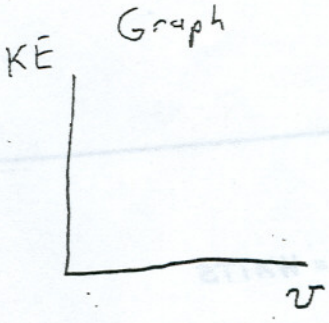


$PE = mgh$

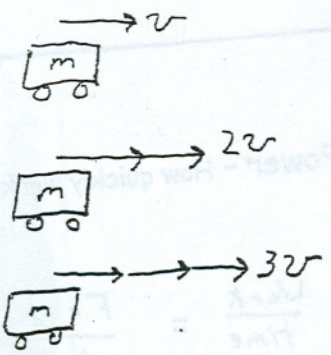


$W = F \cdot d$

Units = Joules (How do they break down)



Form of KE equation



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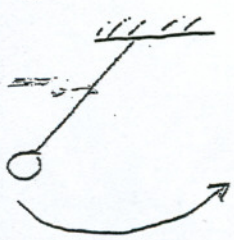
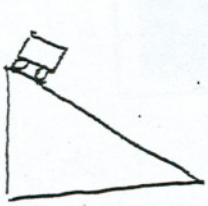
2) Conservation of energy situations. (could be very ideal with no energy lost, or more realistic with energy lost).

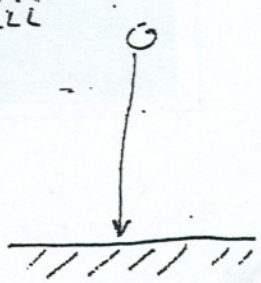
i.



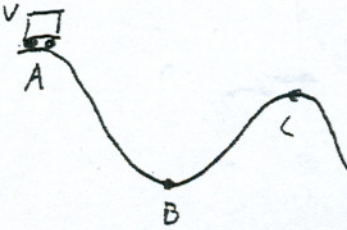
ii.



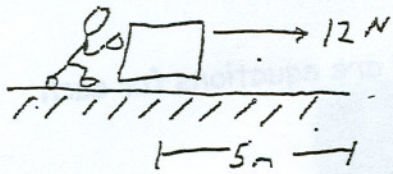
iii.

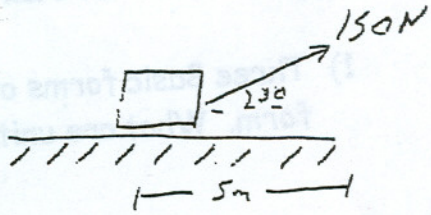


iv.



3) Work equation -





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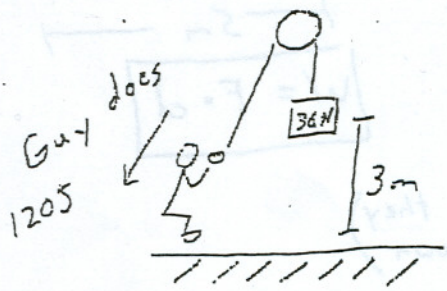
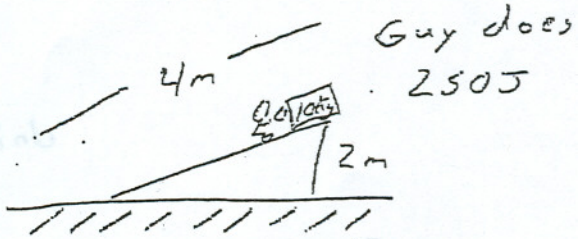
4) General idea of work done on incline, or with pulley -
(some may get lost to friction)





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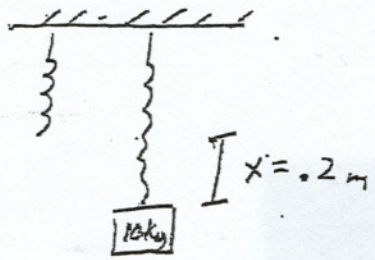
5) Power - How quickly work is done, or energy is gained. ***Joules/sec = WATTS***

$$P = \frac{Work}{time} = \frac{F \cdot d}{t} = F \cdot v$$

SPRINGS -

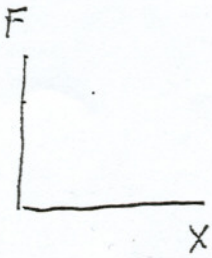
6) Two spring Equations - (K= spring constant, ***Newtons/meter***)

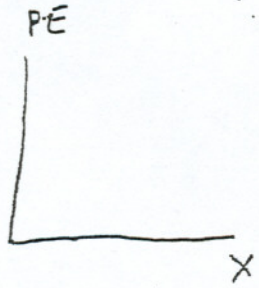


$$F = Kx$$

$$PE = \frac{1}{2}Kx^2$$

7) Graphs for springs -

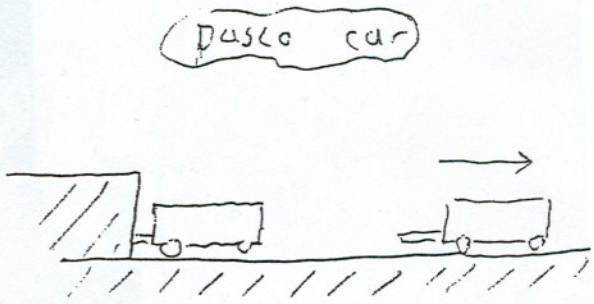




7b - Conservation of energy & Springs

$$PE_{spring} = PE_{gravity}$$

$$\frac{1}{2}Kx^2 = mgh$$



$$PE_{spring} = KE$$

$$\frac{1}{2}Kx^2 = \frac{1}{2}mv^2$$