

Tuesday, December 17/13
Physics 112/111

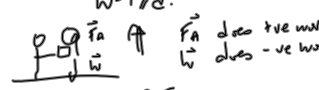
Return: Quizzes/Labs/ICA

1. **Test - Unit 3: Wednesday, Dec. 18/13**
2. Universal Wave Equation
3. Worksheet: Wave Equation and More - Try for Thursday
4. Wave Behaviors - Start Thursday

Unit 3

(6 + 7)

1. Work: $W = Fd$
 + lifting/lowering $F = mg$
 F/d
 F individual force
 motion
2. 3 cases when work is not done
 $W = Fd$ $W = Fd$ $W = Fd$
 $F = 0N$ $d = 0m$ $F \perp d$

3. Positive vs Negative Work.
 Types
 $W = Fd$




$E_k = \frac{1}{2}mv^2$ (speed)
 $E_g = mgh$ (height)
 $E_e = \frac{1}{2}kx^2$ (Spring constant or compression of spring)

$v_i \rightarrow v_f$ $h_i \rightarrow h_f$
 $W = \Delta E_k$ $W = \Delta E_g$
 $W = E_{kf} - E_{ki}$ *ref. level.
 $Fd = \frac{1}{2}mv_f^2 - \frac{1}{2}mv_i^2$ $W = E_{gf} - E_{gi}$
 $Fd = E_{kf} - \frac{1}{2}mv_i^2$ $Fd = mhf - mghi$
 $Fd = E_{kf} - mghi$

$P = \frac{\Delta E}{t} = \frac{W}{t} = \frac{Fd}{t} = Fv$
 power lift/lower $F = mg$
 $P \Rightarrow$ unit W (watt)
 $1hp = 746 W$

b. Efficiency = $\frac{E_o}{E_i} \times 100\%$ $\frac{95}{100}$
 $Eff = \frac{W_o}{W_i} \times 100\%$ 95%
 $E_k \rightarrow E_T$
 Kinetic Thermal
 E_i E_o

7. Energy Conservation

* Two or more "things" about the system must change.

- ie) v, h
- ia) v, x
- ic) h, x

$E_{ki} + E_{gi} + E_{ei} = E_{kf} + E_{gf} + E_{ef}$
 speed \downarrow \downarrow compressed
 is it or the ref. level? or stretched
 include ref. level *

Attachments

Student ID re-takes 2013.doc