Energy - Capacity to do work

I) **Work** - when a _____ causes an object to _____ in the direction of that force.

*** _____ - means **direction** doesn't count

A) Equation W = _____ $\mathbf{F_m}$ - force acting in same direct as motion

(Nm) (N)(m) d - displacement

Other units for work (_____) or $\frac{Kg\ m^2}{sec^2}$

Challenge Question: Two people exert a 10 Newton force on a block for 2 meters. One person exerts her force at a 50-degree angle.

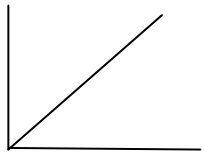
Did both people do the same work???

Person 1 Person 2

Answer:

B) Work and F vs. displacement diagram

F (N)



d (cm)

_____ under a Force vs. displacement plot is equal to _____

II. Energy (Joules) - 2 kinds

A) Potential Energy - _____ energy of that an object has due

to its _____ or _____

1. _____ $P.E._g$ (PE is an abbreviation for Potential Energy)

Not in reference

$P.E._g$ = _____ **g** - on earth = **9.8 m/s^2**

units

mg = _____

h = _____ - distance force could be exerted

ΔP.E. = _____

Ex) What P.E. is gained when a 100 kg object when it is raised 4m straight up?

What PE would be gain if the object were moved 4m to the right?