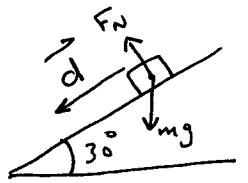
Phys. 101 - Sec # 39 **Quiz # 4 (Ch. 7)**

Name: (key) ID #

A 5.0 kg object starts from rest, and slides 4.0 m **down** a frictionless inclined plane.



1- Find the **work done** by:

a) The gravitational force.

$W_g = (mg)\, d \cos 60$

$= 5(9.8)(4)\cos 60 = 98$ J

b) The normal force.

$W_N = F_N\, d \cos 90 = 0$

2- Find the speed of the object at the end of the 4-m.

$W_{net} = \Delta K$

$98 = \frac{1}{2} m \left(v_f^2 - v_i^2\right)$

$v_f = \sqrt{\frac{2(98)}{5}} = 6.3 \frac{m}{s}$

As a particle (of mass 1 kg) moves from point A to point B only two forces act on it: one force does +50 J work, while the other force does work W_2. Calculate the value of W_2, if the particle starts from rest at point A and has kinetic energy of 20 J at point B.

$W_{net} = \Delta K$

$50 + W_2 = K_f - K_i$

$50 + W_2 = 20$

$W_2 = 20 - 50 = \boxed{-30 \text{ J}}$