Phys. 101 - Sec # 10 **Quiz # 5 (Ch. 7)**
Name: Key ID #

1- A 50-N force is the only force on a 2.0-kg box that starts from rest. Calculate the rate at which the force is doing work (the power) at the instant the particle has gone 3.0 m.

$P = \vec{F} \cdot \vec{v}$

$= 50(12.2)$

$P = 610\ W$

$F = ma$

$a = \frac{F}{m} = \frac{50}{2} = 25\ m/s^2$

$v_f^2 - v_i^2 = 2a\Delta x$

$v_f = \sqrt{2(25)(3)}$

$= 12.2\ m/s$

2- As a particle (of mass 1 kg) moves from point **A** to point **B** only two forces act on it: one force does –30 J work, while the other force does +50 J work. **Calculate** the final speed of the particle at point **B**, if it starts from rest at point **A.**

$W_{net} = \Delta K$

$+50 - 30 = \frac{1}{2} m (v_f^2 - v_i^2)$

$v_f = \sqrt{2(20)} = 6.3\ m/s.$