Phy 1 Mid Term: Set B

1. Draw the graphs,

   $y = x_m \sin(kx - \omega t)$,

   $v = \omega A \cos \omega t$,

2. Show that,

   $y = x_m \cos(kx - \omega t)$ is a solution of the equation $d^2(x)/dt^2 + \omega^2 x = 0$

3. A 1 kg mass is attached at the end of a spring, if the last 2 digits of your id is the spring constant (expressed in N/m), find the displacement for an applied force of 1 N.

4. A 10 kg mass is attached at the end of a spring, if the last 2 digits of your id is the spring constant (expressed in N/m), find the angular frequency of the oscillation.

5. The equation of a transverse wave traveling along a very long string is given by, y = (20cm) cos [(10 rad/m)x + (22 rad/s)t].
   Calculate (a) the amplitude and the angular frequency.