Instructions: *Work on it sequentially, using pen on paper folio.*

1. Is known oscillator harmonious simple form mass-spring like following:
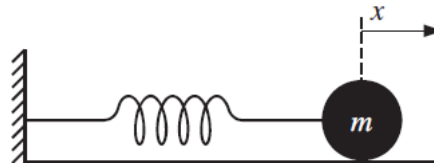
   At time t = 0, the mass m experiences a deviation of 0.04 m from the equilibrium point. If speed oscillation is 0.5 m/s and M = 0.8kg, k = 180 N, determine function the oscillation.

2. If is known function propagating waves on rope with propagation speed 1m/s is:

$$y = A sin\, k\,(\,x - vt\,)$$

   Draw it graph of the *y wave function* to *x* on moment t = 0, t = 1 s and T = 2 s.

3. Linear polarized waves with amplitude Ao, direction of propagation along a path in a plane XY, and the direction of vibration is also in the XY plane. If the angle formed by the wave propagates the is 45° from the X axis, then
   a) Make it illustration
   b) Determine amplitude, And
   c) Determine equality wave

4. It is known that the pulse wave is expressed by the following function *y(x,t)* , determine the speed and direction propagation of the wave.
   a) $y(x,t) = 2(\,ax - bt\,)^2$
   b) $y(x,t) = \exp\, i(x - 3\,t)$
   c) $y(x,t) = \dfrac{b^3}{b^2 + (\,2\,x - ut\,)^2}$

Happy Work