PHYS 201L Pre-lab on Simple Harmonic Motion Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Read section 10.2 in your text (Cutnell & Johnston) and answer the following questions.

1. Define period and express its unit.
2. Define frequency and express its unit.
3. The displacement of a simple harmonic motion is, *X = A Cos ωt*.

Describe the following terms in the above equation.

a. *A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* b. *ω \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

1. Express *ω* in terms of period, *T* and frequency, *f*.
2. Write down expressions for the velocity and acceleration of a simple harmonic motion.
3. The drawing shows plots of the displacement *x* versus the time *t* for three objects undergoing simple harmonic motion. Which object, I, II, or III, has the greatest maximum velocity?

