

INTRO TO SIMPLE HARMONIC MOTION QUESTIONS

- 1) Find at least 5 examples from class/home of simple harmonic oscillators.
- 2) Read Chapter 12, Section One. 437-445
- 3) Explain the difference between a simple and a damped oscillator (from reading)
- 4) Do Section Review 12-1
 - 1 Which of these periodic motions are simple harmonic?
 - a) a child swinging on a playground swing at a small angle.
 - b) a record rotating on a turntable
 - c) an oscillating clock pendulum
 - 2) A pinball machine uses a spring that is compressed 4.0 cm to launch a ball. If the spring constant is 13 N/m, what is the force on the ball at the moment the spring is released?
 - 3) How does the restoring force acting on a pendulum bob change as the bob swings towards the equilibrium position? How do the bob's acceleration (along the direction of motion) and velocity change?
 - 4) When an acrobat reaches the equilibrium position, the net force acting along the direction of motion is zero. Why does the acrobat swing PAST the equilibrium position?