Module 9 Review

Concepts to know: Momentum
Impulse
Law of Conservation of Momentum
Angular momentum

Be able to solve a conservation of momentum problem
Be able to explain what a rocket ship launch has to do with momentum
Honors: Be able to solve a 2D momentum problem

Formulas:

Momentum = Mass x Velocity

Force x Time = Momentum $_{final}$ – Momentum $_{initial}$

Angular momentum = Mass x Velocity x Radius

Module 10 Review

Concepts to know: Periodic motion
Equilibrium position
Amplitude
Restoring force
Spring constant
Uniform circular motion
Simple harmonic motion

Know where the maximums and zeros are for velocity and acceleration in a spring system
Understand the trade-offs between kinetic and potential energy of a spring system
Know when a pendulum would have simple harmonic motion
Know factors that affect the period of a spring system or pendulum

Formulas:

Force = -k x Displacement

Period = $2\pi \sqrt{\text{Mass}/ k}$

PE spring = ½ x k x Displacement^2

KE spring = ½ x Mass x Velocity^2

Period = $2\pi \sqrt{\text{Length}/ \text{Gravity}}$