Pre-AP Physics Fall Semester Review

Study the chapter notes for each chapter we have covered #'s 1 - 12: parts 1 & 2 omitting ch. 9.
Be sure you know how to use the formulas on the formula sheet
For copies of notes, reviews, text probs assigned see: http://www.quia.com/pages/klowry/page2

1) Know the base SI units and common SI prefixes.
2) Be able to use dimensional analysis with units to predict the validity of an equation. Ch.1 #28
3) Know the difference between accuracy and precision.
4) Know the difference between vector and scalar quantities and be able to do calculations with each.
5) Understand the relationship among position-time, velocity-time, and acceleration-time graphs. Know what is meant by negative acceleration.
6) Be able to use the big four equations to calculate the motion of an object. Ch. 2 #26,38
7) Be familiar with free-fall acceleration and how to do calculations when air resistance is negligible.
8) Understand projectile motion and be able to do calculations for an object undergoing projectile motion. Ch. 3 #8,34,48
9) Be able to analyze free-body diagrams to predict acceleration of an object or magnitude of a specific force. Ch. 4 #37,50,52
10) Be familiar with Newton's three laws.
11) Know how to calculate the force of gravity and be familiar with the inverse square law.
12) Be familiar with work, potential energy, kinetic energy, and cons. of energy. Ch. 5 #7,33
13) Know the difference between conduction and convection.
14) Use $q=mc\Delta T$ to calculate temperature changes. Ch 10 #42
15) Use the first law of thermodynamics $(\Delta U=Q+W)$ to calculate changes in internal energy. Ch 11 #39a
16) Understand momentum, impulse, and conservation of momentum. Ch. 6 #14,31
17) Be able to calculate magnitude of centripetal acceleration; know the direction is always towards the center of the path, perpendicular to velocity.
18) Know how to calculate torque and use balanced torques to solve for unknown masses and lever arm distances
19) Be familiar with center of mass.
20) Be familiar with conservation of angular momentum.
21) Be familiar with simple harmonic motion. Know where speed, acceleration, and force are a maximum and zero for an object undergoing simple harmonic motion.
22) Know the factors that affect the period of a pendulum and a spring.
23) Be able to calculate spring constant and period of a pendulum or a spring. Ch. 12 #8,22