PreAP Physics

Test on Wednesday.

What to study: (Not homework, but I'd do it anyway.)

Significant Figures
Math and Significant Figures
Metric Conversions
Conversions

Know what these terms mean: Distance, position, displacement, speed, velocity, acceleration.
Know when the above are positive and negative.
Ex. Can you think of a situation in which an object's velocity and acceleration are in opposite directions?

Be able to calculate the above with the kinematic equations (**which must be MEMORIZED**).

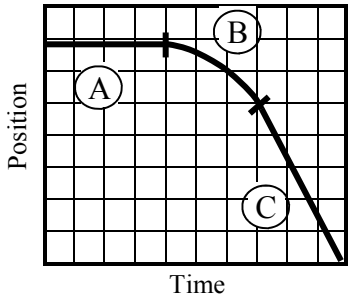
Ex. An object is moving to the left at 17 m/s. After 8 seconds how far has it moved, if it's final velocity is moving left at only 5 m/s?

Be able to do simultaneous equations.

Ex. Person A is running to the left at 4 m/s starting 20 m to the right of you. Person B is walking left at 1 m/s starting 3 m to the left of you. When will Person A pass Person B?

Know how to find slope and use linear equations from graphs.
Be able to recognize acceleration, velocity, and displacement from graphs.
Be able to graph a simple position vs. time or velocity vs. time graph for particular situations.

Graph 1 Position vs. Time



Ex. What do each of the three segments on Graph 1 show?

Ex. On a piece of graph paper draw the path of an object that starts at –8m, then travels at 4 m/s for 5 seconds. Afterwards it rests for 6 seconds.

Freefall
Know the acceleration, velocity, and position as positive, negative, or zero at any point in a dropped or thrown object's path.
Be able to calculate with the kinematic equations freefall situations.

Ex. An object is dropped from 18 m. How fast is it going 3 meters off the ground?

Ex. An object is launched straight up into the air at 60 m/s. How high does it go?

Challenge: Object A is dropped from a 40 m tall tower. 1 second later Object B is thrown down starting at 8 m/s. Where does Object B pass Object A (if ever)?