Physics 115 – Section 201
Homework #12 – Last Homework!!!
Due May 9, 2007

Essay 1, 10 points
What is the difference between velocity and acceleration? Can an object have a nonzero velocity, but have zero acceleration? Give an example from class, and give an example from life outside of class. Can an object have zero velocity, but nonzero acceleration? Give an example from class, and give an example from life outside of class.

Essay 2, 10 points
What kinds of things can you learn from looking at a position vs. time graph of an object? Specifically, what can you learn about an object's velocity? What can you learn about its acceleration? What can you learn about the forces acting on an object? What *can't* you know? Try to be very specific, and discuss all the different kinds of motion we have seen in class.

Problem 1, 10 points

Two cars start at the same place. One moves at a constant speed of 20 m/s. The other starts standing still, but accelerates with a constant acceleration of 5 m/s^2. Write an equation for the velocity as a function of time for each car. When do they have the same velocity?

Problem 2, 10 points

A) For the graph below, *sketch* a corresponding position vs. time graph. This doesn't need to be exact, but should show roughly what's going on. Also describe the motion in words.

B) What is the acceleration for times between t=0s and t=4s? Between t=4s and t=10s?