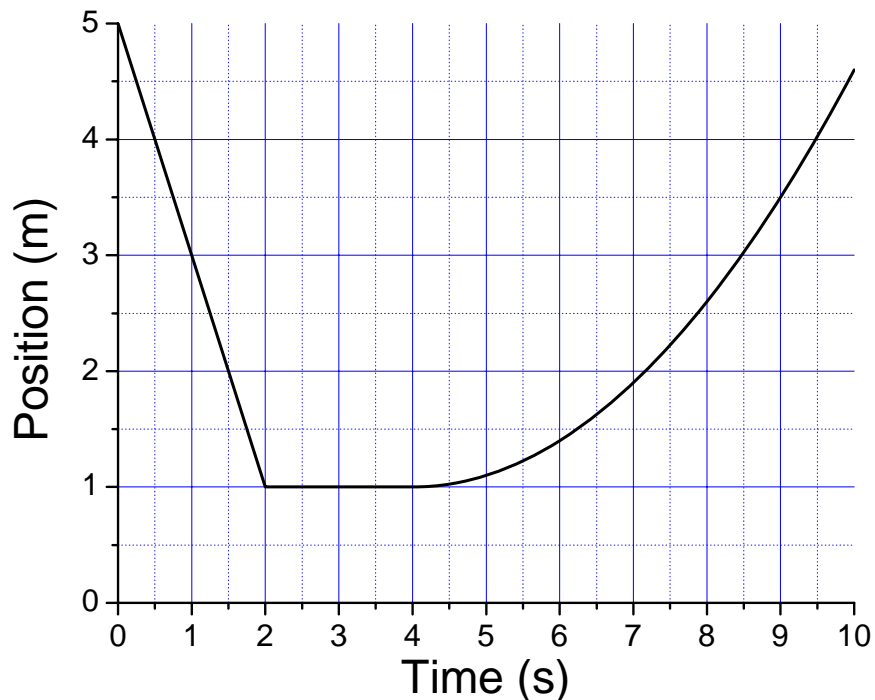


Physics 115 – Section 201

Homework #11

Due May 2, 2007

Essay 1, 10 points: A student makes a motion which is recorded by the motion detector, and results in the graph below. Describe in words what the student is doing to make this motion. Try to give as much detail as possible: don't just say the student is "moving", is she walking slowly, walking fast, or running?



Essay 2, 10 points: Estimate, in meters per second, the speed of the following objects:

- a) a person walking
- b) a tennis ball being served across the court
- c) a feather falling to the ground
- d) a snail crawling across a sidewalk

Essay 3, 10 points: If a police officer gives you a ticket for "speeding", is it because your instantaneous speed is too high, or your average speed is too high? (Or does it depend on the situation?) Do you think this is fair? Why or why not?

Problem 1, 10 points: For the graph in Essay 1 above, estimate the instantaneous velocity at the following times:

- a) $t = 1$ second
- b) $t = 3$ seconds
- c) $t = 5$ seconds
- d) $t = 8$ seconds

Problem 2, 10 points: For the graph in Essay 1 above, say whether the student is accelerating or not (yes or no) at the following times:

- a) $t = 1$ second
- b) $t = 3$ seconds
- c) $t = 5$ seconds
- d) $t = 8$ seconds