University of Alabama
Department of Physics and Astronomy

PH 105 LeClair Summer 2012

Quiz 1

1. A particle moves along the x axis according to the equation $x(t) = 5.00 + 2.75t - 4.90t^2$, where x is in meters and t is in seconds. What is the position of the particle at $t = 2.5\,\text{s}$?

- □ 5.50 m
- □ -18.75 m
- □ -0.375 m
- □ -23.75 m

2. What is the velocity at $t = 2.50\,\text{s}$? for the particle in question 1?

- □ -23.8 $\frac{\text{m}}{\text{s}}$
- □ -21.8 $\frac{\text{m}}{\text{s}}$
- □ -37.5 $\frac{\text{m}}{\text{s}}$
- □ 23.8 $\frac{\text{m}}{\text{s}}$

3. A thrown object travels along the $+x$ axis according to $x(t) = 20.0t - 4.90t^2$, where x is in meters and t is in seconds. Determine the time when it reaches its maximum x value.

- □ 2.04 s
- □ 4.08 s
- □ 2.00 s
- □ 3.06 s

4. A basketball player leaps for a rebound (from rest) and spends 0.50 s in the air. What is the player's vertical leap (maximum height)? (Hints: falling object; how long is spent going *down*?)

- □ 0.24 m
- □ 0.62 m
- □ 1.23 m
- □ 0.31 m