Math 220 (section AD?) **Quiz 6** **Fall 2012**

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (3 points) A ladder 12 feet long rests against a vertical wall. If the bottom of the ladder slides away from the wall at a rate of 0.5 feet per second, how quickly in radians per second is the angle between the ladder and the wall increasing when the bottom of the ladder is 5 feet from the wall?

2. (4 points) A rock is thrown vertically upward from the surface of a planet. The rock's height above the planet's surface is given by the equation $s = t(24 - 1.2t)$, where t is measured in seconds and s is measured in meters.

   (a) Find a formula for the rock's velocity at time t.

   (b) What is the maximum height reached by the rock?

3. (3 points) Determine a formula for P as a function of t given that $8P' + 2P = 0$ and $P(0) = 5$. Hint: You may recognize the solution more quickly if you first solve the given equation for P'.