Read Section 3.4. Work the embedded problems.

1. A potato is launched vertically upward from a platform 20 feet off the ground. The distance in feet that the potato travels from the ground after t seconds is given by $s(t) = -16t^2 + 64t + 20$.

   (a) Find the initial velocity of the potato.

   (b) Find the velocity and the acceleration of the potato when $t = 3$. (Use a calculator for the arithmetic if you want...)

   (c) Is the potato speeding up or slowing down? Why?

   (d) What is the velocity of the potato when it reaches its maximum height and why?

   (e) What is the maximum height of the potato?

   (f) Assume the potato lands on the ground (not the platform). How long is the potato in the air?

   (g) What is the velocity of the potato when it hits the ground?

   (h) You should have observed in part (b) that the acceleration is constant. What does this number represent?