MATH 220: CALCULUS I
WORKSHEET 16
MARCH 14, 2013

Homework: Read section 4.9; do problems 1–17, 20–22, 25–33, 41–43, 65 69, and 73–75.

1. Find the most general antiderivative of each of the following functions.

   (a) $f(x) = 1/x$

   (b) $f(x) = x^n, \ n \neq -1$

   (c) $f(x) = 2e^3$

2. Find f

   (a) $f''(x) = 5x^2 + 2$

   (b) $f'''(x) = \sin(x) - \cos(x)$

3. Suppose I throw a rock straight up into the air with an initial velocity of v_0, from a height of y_0, and where the accelleration due to gravity is a_0 (negative).
   Find an equation for the height of the rock at time t using that $v'(t) = a(t) = a_0$.
   (i.e. the derivative of the velocity is the accelleration at time t, which is always a_0.)