Math 16A (Summer 2010)
Kouba
Quiz 3

PRINT Name: ________________________________

Exam ID #: ________
1.) (10 pts.) Use \( f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h} \) to find the derivative of 
\( f(x) = 3x^2 - x + 1 \).

2.) (5 pts. each) Use shortcut rules to find the derivatives of each function.
   
   a.) \( y = (1/2)x - 3 \)

   b.) \( f(x) = x^{-3} + x^2 - 8x^{1/4} \)

   c.) \( y = \frac{x^3 - x}{x - 3} \)

   d.) \( g(x) = (2 - x)(3x + 7)(4 - \sqrt{x}) \)
3.) (6 pts.) Find an equation of the line tangent to the graph of \( f(x) = \frac{x^2}{2-x} \) at the point \( x = 3 \).

4.) (7 pts. each) Use the graph of \( f \) to draw a rough sketch of the graph of its derivative \( f' \).