QUIZ 2
Math 220-51

NetID: October 8, 2009
(Please don't put your name!)

Question 1. *(8pts) Let* $f(x) = \dfrac{2}{3x+1}$. Starting from the definition of the derivative as limit, *find* $f'(x)$. *(No credit if you just use formulas!)*

Question 2. *(8pts) Let* $f(x) = \dfrac{\cos x}{x^2 - 1}$. *Find* $f'(x)$.

Question 3. *(9pts) Consider the displacement (or position) function*

$$s(t) = \frac{t^2 - 9}{2t + 6} - \frac{1}{2} t^2$$

of an object on a straight line.

1. *Find the velocity of the object at time* t. *(Hint: examine the function before computing!)*

2. *Find the acceleration of the object at time* t.

3. *At what time* t *is the object at rest (i.e., not moving)?*