Math 229, Section 2

Quiz 1 **Name:**_____

Due: 1/29/2007

This is a Take-Home Quiz. You may use your book and course notes, and you may work with other members of the class, but you may not consult with outside tutors (at least not on these specific problems).

1. (4 points) Suppose that the supply and demand or a product are given by the equations $5p+6x = 130$ and $p - 2x = 10$, where x is the quantity sold, in thousands, and p is the price in dollars. Find the equilibrium price for this product, and the quantity sold at this price.

2. (4 points) Find the values of x that satifsy the inequality $x^2 - 2x - 3 \leq 0$. Write your answer using interval notation.

3. Given the function $f(x) = \dfrac{\sqrt{2x+4}}{x^2-4}$

   (a) (2 points) Find $f(0)$ and $f(-6)$

   (b) (2 points) Find and simplify $f(a+2)$

   (c) (3 points) Find the domain of f. Give your answer in interval notation.

4. Given $f(x) = \sqrt{x-1}$ and $g(x) = x^2 - 3x + 6$

   (a) (1 point) Find $f + g(2)$

   (b) (2 points) Find $f \circ g(5)$ and $g \circ f(5)$

   (c) (2 points) Find and simplify equations for $f \circ g(x)$ and $g \circ f(x)$