Math 199
Fall, 2005
Quiz 5 - §2.4

Name: **Solutions**(Pink)

Circle the letter corresponding to your answer. Circle only one answer per question. There is no partial credit on this portion of the quiz.

1. T F The function $f(x) =\mid x-2 \mid$ has the same graph as $g(x) =\mid x \mid$ shifted down 2.

   This is **False**. If it were shifted down two, it would have been $f(x) =\mid x \mid -2$. This is a shift right two units.

2. The function $f(x) = \begin{cases} 8x + \frac{1}{x} & \text{if } x < 0 \\ 4 & \text{if } 0 \leq x \leq 2 \\ 6 - x & \text{if } x > 2 \end{cases}$ has

   A. $f(0) = 4$

   B. $f(2) = 4$

   C. $f(-1) = -9$

   D. All of the above

   E. None of the above

   Using the second rule, we see that $f(0) = 4$. Using the same rule, we see that $f(2) = 4$. Lastly, we use the first rule to see that $f(-1) = 8(-1) + \frac{1}{-1} = -8 - 1 = -9$. Therefore the answer is D.

For the next problem, show all work to receive full credit. No Work = No Credit.

3. Find the equation of a polynomial of degree 4 with leading coefficient -3 who has $x-$intercepts only at $x = 2$, $x = 0$, and $x = 5$.

   There are lots of possible solutions, including:

$$P(x) = -3(x-2)x(x-5)^2$$