232 Quiz R **Name:** _____

January, 2012

Work individually. You may use your Notebook, provided that everything in it was written personally by you during this semester and that you have no loose/unattached pages.

1. What is the domain of the function $f(x) = \dfrac{\sqrt{x-1}}{x-3}$?

A) $(1,3) \cup (3,\infty)$ **B)** $(-\infty,3) \cup (3,\infty)$ **C)** $[1,3)$ **D)** none of these

2. If $(2,5)$ is on the graph of an invertible function f, then what point must be on the graph of f^{-1}?

A) $(2, \frac{1}{5})$ **B)** $(5,2)$ **C)** $(\frac{1}{2}, 5)$ **D)** $(\frac{1}{2}, \frac{1}{5})$

3. What is the global maximum value of $f(x) = (x-2)^2$ on the interval $[0,5]$?

A) $x = 0$ **B)** $x = 2$ **C)** $x = 5$ **D)** no maximum

4. With polynomial long division we can write $\dfrac{2x^2+x+4}{x^2+3} = 2 + \dfrac{P}{x^2+3}$, where P is:

A) $2x+1$ **B)** $2x^2+x+2$ **C)** $x-2$ **D)** 2

5. If $f(x) = (x^3+1)^9$, then $f'(x)$ is equal to:

A) $9(3x^2)^8$ **B)** $9(x^3+1)^8$ **C)** $3x^2(x^3+1)^8$ **D)** $27x^2(x^3+1)^8$

6. Find a function $f(x)$ whose derivative is $f'(x) = 3x^{-2}$.

A) $\dfrac{-3}{x} + 2$ **B)** $-6x^{-3}$ **C)** $\dfrac{1}{6x}$ **D)** $\dfrac{2}{3x^3}$