Math 160 Quiz 4 Name: _____

July 11, 2002

This quiz is worth 10 points. Show all work for credit.

1. Express $h(x) = f(g(x))$, if $f(x) = x^3$ and $g(x) = \dfrac{1}{x-7}$.

2. Let $h(x) = e^{4x}$. Find simpler functions $f(x)$ and $g(x)$ such that $f(g(x)) = h(x)$.

3. Let $f(x) = \dfrac{1}{x^2}$. Simplify $\dfrac{f(x+h) - f(x)}{h}$.

4. For $f(x) = 3x^3 - 7$, find $f^{-1}(x)$.

5. For $f(x) = xe^5$, find $f^{-1}(x)$.

6. (Bonus @2 points) If $f(x) = 0$ when $x = -3$, find when $f(x+5) = 0$.