Math 165: Honors Calculus I   Name:_____
Quiz 8   *Nov. 10, 1994*

1. a) Define the composition uv of two functions u and v.

   b) Let $u(x) = \sqrt{x}$, $v(x) = 4 - x^2$ and let the domain of both functions be $\{x \in \mid x \geq 0\}$. Determine the domain of the composition, uv.

2. a) State BOLZANO'S THEOREM.

   b) State the INTERMEDIATE VALUE THEOREM.

3. Prove that the equation $\cos(x) = x$ has a solution.

4. a) Define the inverse of a function $f(x)$.

   b) Find the inverse of the function $f(x) = x^4 - 2x^2 + 1$, $x \geq 1$.