

Math 165: Honors Calculus I

Name: _____

Quiz 8 *Nov. 2, 1995*

1. Prove using the definition of continuity that if v is continuous at p and u is continuous at $q = v(p)$, then the composition $u \circ v$ is continuous at p .

2. a) State BOLZANO'S THEOREM.

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

3. Let $f(x) = (x^2 - 2x)^2 + 1$ for $x \geq 2$.

a) Show that $f(x)$ is strictly increasing in its domain $x \geq 2$.

b) Find a formula for $f^{-1}(x)$ and determine its domain.