

Math 181

Quiz 11

Name: _____

October 22, 2002

Show all work for credit.

Leave all answers as exact answers unless otherwise stated.

1. Show that $f(x) = 3x^7 + 5x^3$ has exactly one root.

2. Show $g(x) = x^2 + 1$ has exactly one root.

3. (Bonus) Let α , β and γ be constants. Find the global maximum of $f(x) = \tan^{-1}(\alpha x) \sin(\beta x) e^{\gamma x}$ on the interval $[-\pi, \pi]$.