

Math 560
Fall 2005
Homework 8
Assigned Monday, 24 October, 2005

1. (Section 2.4, #6, p. 97) Use the intermediate value theorem to prove that any polynomial of odd degree with real coefficients has at least one real root.
2. (Section 2.4, #10, p. 97) Give a mathematical argument to show that a heated wire in the shape of a circle must always have two diametrically opposite points with the same temperature.
3. (Section 2.4, #8, p. 97) Show that any function that is locally constant on an open connected set D is in fact constant on D .