Math 251: Pledged Set 8

Due: October 28, 2008

This is a pledged set. Therefore, no outside help from book, calculator, or other people.

1. Compute Δy and dy for

$$y = \sqrt{x}, x = 1, \Delta x = 1$$

when $dx = \Delta x$

- 2. The radius of a circular disk is given as 24 cm with a maximum error in measurement of 0.2 cm.
 - (a) Use differentials to estimate the maximum error in the calculated area of the disk.
 - (b) What is the relative error?
- 3. Verify that

$$x^3 - x^2 - 6x + 2$$

on [0,3] satisfies Rolle's Theorem. Find the numbers c that satisfy Rolle's Theorem.

4. Show that

 $2x - 1 - \sin x = 0$

has exactly one real root.

5. Find the local max and mins of

$$x + \sqrt{1 - x}$$