Math 251: Pledged Set 7

Due: October 29, 2009

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. Show that
$$2x - 1 - \sin x = 0$$
has exactly one real root.

3. Find the local max and mins of
$$x + \sqrt{1 - x}$$

4. Calculate
$$\lim_{x \to \infty} \frac{\ln x}{\sqrt{x}}.$$

5. Find a positive number such that the sum of the number and its reciprocal is as small as possible.