Homework Assignments: HW # 5
Math 850: Numerical Analysis I
Fall 2009

Do textbook problems

1. Lecture 12: 12.3.

2. Lecture 13: 13.3.

3. Using single precision, evaluate the expression

\[ a = 1000 \left( \frac{c}{\sqrt{b^2 + c - b}} - 2b \right) \]

when \( b = 1 \) and \( c = 0.004004 \). Compare the computed value of \( a \) with the exact value \( a = 2 \). Show that \( a \) can be written

\[ a = \frac{1000c}{\sqrt{b^2 + c + b}}. \]

Now evaluate \( a \) when \( b = 1 \) and \( c = 0.004004 \). Explain why this second expression is more accurate.

4. Lecture 14: 14.1 (a), (b) and (c); 14.2.

5. Lecture 15: 15.1 (a), (b).

Due date: Wednesday, Oct. 28, 2009. In class.