

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.