Preparation guide for Quiz 01

Most of the exam problems will be closely related to your homework problems. Make sure you understand all of them.

You will need to do simple programming for the quiz, such as revising a (given) bisection code for a different problem. Try it first.

1. Understand why it takes 32 bits for single precision and 64 bits for double precision.

2. Understand the source of loss of significance caused by subtraction and how to avoid them. Study the examples in the textbook.

3. Understand the source of instability for recurrence formula. Read example 3 on page 32.

4. Understand rate of convergence.

5. Understand the principle of bisection and be able to derive error estimate.

Other remarks:

These are things that will not appear in the exams, but you may be curious and want to know about.

1. You may find different definitions for the machine epsilon, since it is not officially put in IEEE standard. We take the one adopted by Matlab for convenience. Use 'help eps' command in matlab to find out the details.

2. Regarding problem 11(c) and 12(c) of section 1.2, be reminded that there is a theorem that gives the error bound between an 'alternating series' and its finite term truncation. Which is ...?