Numerical Analysis I, Fall 2009 (http://www.math.nthu.edu.tw/~wangwc/)

Quiz 02

Oct 16, 2009.

- 1. Propose a method of computing $\sin(1.00001) \sin(1)$ to prevent loss of accuracy.
- 2. How many "bits" does it take to store a floating point number in the range

$$\pm 1.d_1d_2\cdots d_s \times 2^e$$

with $s = 33, d_i \in \{0, 1\}, -509 \le e \le 512?$

- 3. Describe the Newton's method for finding $\sqrt[3]{2}$.
- 4. Describe the secant method for finding $\sqrt[3]{2}$.
- 5. Give a fixed point iteration for solving $x^3 3 = 0$. Make sure to check your method converges.

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