

13.002J - Introduction to Numerical Analysis for Engineers
Class Survey - Spring 2005

Name:

Course:

E-mail:

What programming subjects have you taken at MIT?

- 1.00
- 6.001
- 10.001

Self-Assessment Quiz (no grade)

A. Please circle the number representing your level of knowledge and understanding in each of the following areas (0: no knowledge, 10: Expert):

Linear algebra	0	1	2	3	4	5	6	7	8	9	10
Differentiation	0	1	2	3	4	5	6	7	8	9	10
Integration	0	1	2	3	4	5	6	7	8	9	10
Ordinary Differential equations	0	1	2	3	4	5	6	7	8	9	10
Fortran	0	1	2	3	4	5	6	7	8	9	10
C	0	1	2	3	4	5	6	7	8	9	10
C++	0	1	2	3	4	5	6	7	8	9	10
Java	0	1	2	3	4	5	6	7	8	9	10
Scheme	0	1	2	3	4	5	6	7	8	9	10
Matlab	0	1	2	3	4	5	6	7	8	9	10
Other prog. language (specify)	0	1	2	3	4	5	6	7	8	9	10

B. Create a Matlab script that computes and plots the following two representations of the sine function for small arguments:

$$f(x) = \sin x \tag{1}$$

$$f(x) = \sqrt{1 - 10^{-7} * \text{round}(10^7 \cos^2 x)} \tag{2}$$

for $x = \pi * 10^{n/100}, n = -700, \dots, -300$. The function ‘round’ will round the argument to the nearest integer. Describe what you think is going on.