Integrated Calculus I, Fall 2004
Homework Assignments
Homework 1, due Tuesday August 31st

Do the following problems, to be discussed during your recitation:

- Using Maple, or otherwise, plot the graphs of the following functions and for each obtain its domain and range. Also discuss relations between these functions (if any).

(a) \( a(x) = \frac{1}{x^2-1} \)
(b) \( b(t) = \sin(t) \)
(c) \( c(t) = \sin(\frac{1}{t}) \)
(d) \( d(t) = \ln(t) \)
(e) \( e(t) = e^t \)
(f) \( f(y) = \tan(y) \)
(g) \( g(u) = \arctan(u) \)
(h) \( q(t) = \sin(3(t - 1)) \)

- Solve the following inequalities and express the solution set as a union of real intervals.

(i) \( x^2 - 5x + 6 < 0 \)
(ii) \( \frac{x}{x^2-9} > 0 \)
(iii) \( -\frac{1}{2} < \sin(x) < \frac{1}{2} \).

Homework 2, due Tuesday September 7th

- Read Chapter 1.

- Review the first week of notes on Paul Gartside’s homepage for Integrated Calculus I.

- Do the following book problems, to be handed in during your recitation:
  - Section 1.1: questions 24, 28.
  - Section 1.2: questions 24, 36, 40.
  - Section 1.3: questions 10, 20, 28.
Homework 3, due Tuesday September 14th

- Prepare for quiz 1 this Friday in class.
  Topics: functions and vectors.

- Review the first two weeks of notes on Paul Gartside’s homepage for Integrated Calculus I.

- Do the following book problems, to be handed in during your recitation:
  - Section 1.4: questions 2, 8, 16.
  - Section 3.2: questions 4, 16, 18, 30, 38.

Homework 4, due Tuesday September 21st

- Review the first three weeks of notes on Paul Gartside’s homepage for Integrated Calculus I.

- Do the following book problems, to be handed in during your recitation:
  - Section 3.2: question 50.
  - Section 3.3: questions 14, 16.
  - Section 3.5: questions 30, 34, 40, 46, 58.