Calculus I MA113:10-12 Week 6 and 7

- Spring 2003 Russell Brown
- Homework C will be due on Monday, 24 February 2003. For this assignment, it will be useful to know the quadratic formula. The quadratic formula gives the solutions of a quadratic equation,  $ax^2 + bx + c = 0$ , as

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

The expression  $b^2 - 4ac$  inside the radical is known as the discriminant. The discriminant tells us how many roots the equation has.

Sign of $b^2 - 4ac$	Number of roots
$b^2 - 4ac > 0$	2
$b^2 - 4ac = 0$	1
$b^2 - 4ac < 0$	0

- The quiz on Tuesday, 25 February 2003 will cover Appendix D and section 2.4.
- The error of the week: Not being able to work homework problems on the exam.

Two of the problems that I graded were not done very well: finding the average velocity and finding a tangent line. The problem on average velocity was similar to  $\S1.1 \#5a, \#7a$ . The problem of finding tangent lines is discussed in  $\S2.2 \# 37, 39, 45, 47, 49$ . Both of these were part of the assigned homework.

To do well in this course, one must work lots and lots and lots of problems.

To study for the exam, do not read your solutions. Work the problems again, or work the even problems next to homework problems.

Please remember that free tutoring is available in MathSkeller. I am there from 3 to 4 on Monday. No one has come to ask a question (except possibly the week that I missed).

- Homework D. §2.5 #60, 66. Due 28 February 2002.
- We will omit section 2.10, Newton's method. This will allow us to catch up before the second exam.
- A puzzle:
  - What happens when you differentiate fg twice, three times, four times? Do you see a pattern?