Homework 1: Scheme Data and Operators

Due:

Many of the exercises in this section are such that you can check your own work, so do that. You should do all of them, but just hand in the ones with points attached. (Hint: if you type in solutions to the problems for which that makes sense, not only can you turn in a printout that is easy to read, but you can also check your work.)

1. (0 points) Do exercise 1.1 (p. 13 of the textbook), which asks you to play with Scheme. There is nothing to turn in for this problem. (The way to get a transcript is described in the *How to Run Scheme* handout, near the bottom of page 2.)
2. (0 points; basic) Do exercise 1.2, parts a-d.
3. (0 points; basic) Do exercise 1.3, parts a and c.
4. (0 points; basic) Do exercise 1.4, parts a and c.
5. (6 points; basic) Do exercise 1.5.
6. (10 points; basic) Do exercise 1.6.
7. (5 points; extra credit) Do exercise 1.8.
8. (4 points) Do exercise 1.9.
9. (4 points; basic) Do exercise 1.10.
10. (0 points; basic) Do exercise 1.12, parts a, c, d, f, and check your answers on the computer.
11. (4 points; basic) Do exercise 1.13.
12. (4 points; basic) Do exercise 1.14, parts a, b, d, f.
13. (4 points; basic) Do exercise 1.15, parts a, c, e, g.
14. (5 points; extra credit) Is there any limit on the size of numbers that Chez Scheme can handle before it crashes? If so what is it (approximately)? If not, how do you think they represent such large numbers in the computer? If you konw any other programming languages or programs that deal with numbers, how do they compare in limits on numbers?