Lab 1

When you do exercises in the textbook, be aware that the numbering is rather different from the way most textbooks are numbered. In particular, problem numbers don't have anything to do with what section they are in, only the chapter.

Do, but do not submit the following:

- 1. Using a search engine, locate the class website (not Sakai). Read the syllabus if you haven't already, especially the section on labs.
- 2. Predict the answers for AS&S 1.1, and then check your answers with the interpreter. Also convert 1.2 and check your answer in the interpreter.

Submit either .scm files (for code) or text files (for written answers to questions) for each of the following. All code files for this lab must contain proper tests that run when the file is loaded.

- 1. Do AS&S exercises 1.3 1.5. (Write several sentences **explaining** the answers to 1.4 and 1.5 in addition to showing the substitutions) Wherever a procedure definition is called for, use the lambda notation as I do in class¹.
- 2. AS&S exercise 1.6
- 3. Implement the square-root example (using lambda notation) from section **1.1.7** of your text.
- 4. Using only **cons** to put things together, write single s-expressions in a file that will evaluate to each of these (in other words, the interpreter will return this result):

(a) (2 3 (5) (7 8 (9) ()) 10)

- (b) (+ 2 (- 5 3) (* 2 3) 4)
- 5. Draw the "pair" diagram for the expressions in the previous problem, as shown in class. Submit this on paper only; sloppy work will lose points.
- 6. Do AS&S exercise 1.7

Submit your code file and a script file showing files being loaded (and tested) via Sakai (due Sunday midnight) and on paper (to your TA at the START of **Monday** lab) to receive full credit.

When you use Sakai, remember that you can "upload" files multiple times, but you only click "submit" once.

¹Why do you think I insist on the more awkward notation at the beginning of the course?