

**COMP 210, Spring 2000, Homework 1**  
**Due Wednesday, September 6, 2000 at the start of class**

Before you start the homework, you should remind yourself of our General Advice, Advice on Homeworks, and Grading Guidelines. All are available from the class web site (<http://www.owl.net.rice.edu/~comp210>).

1. (1 point) Put the following expressions into Scheme's prefix notation. Type the results into Dr. Scheme's interactions window and see if you get the expected results.
  - a) 17
  - b)  $17 * 12$
  - c)  $170 - 5 * 12$
  - d)  $5 * 6 * 7 * 8$
2. (2 points) Hand evaluate the following Scheme expressions. After you are done, type them into the interactions window in Dr. Scheme to confirm your results.
  - a)  $(- (* 3 5) 20)$
  - b)  $(* pi (* 10 10))$
  - c)  $(+ 73 false)$
  - d)  $(/ 12 0)$
3. (1 point) Go to the definitions window and type in the three functions from Lecture 2: **Owe**, **Wage**, and **Area**. Click the execute button. Go to the interactions window, and invoke each function on two different arguments.
4. (1 point) Write a function **Rectangle** that consumes a height and a width, and produces the area of a rectangle of that size. Be sure to write down the contract and purpose. Test your program on several inputs. Hand evaluate the expression  
(Rectangle 10 15)