1. (4 points). Rewrite the following s-expressions using the list notation of LISP/Scheme; if it cannot be done for a particular s-expression, explain why not; if it can done partially, do so as much as possible:

   a. (4 . NIL)
   b. ((3 . NIL) . (4 . NIL))
   c. (3 . ((4 . NIL) . (5 . NIL)))
   d. (3 . (4 . 5))

2. (4 points). Rewrite the following lists using the dot notation; if it cannot be done for a particular list, explain why not; if it can done partially, do so as much as possible:

   a. (7)
   b. (7 8)
   c. (7 (8))
   d. ((7) 8)

3. (4 points). Write down the results for each of the the following function applications; if any of them is erroneous, indicate what the problem is:

   a. CAR[ (() . 4) ]
   b. CDR[ (() . 4) ]
   c. CONS[ (a), (b) ]
   d. NULL?[ CDR[ (a) ] ]

4. (8 points). Define a function, call it ‘CHECK’ that takes an integer as its first argument, a list of integers as its second argument and returns the count of how many times the first argument appears in the second. Thus:

   CHECK[ 3, (2 0) ] = 0
   CHECK[ 3, (2 3) ] = 1
   CHECK[ 3, (3 1 3) ] = 2

**Important Note:** Use only the notations, conventions, and primitives we have introduced in class.

**Important Note 2:** The second mid-term will be on Monday, Nov. 21. Topics for the mid-term will be everything we discuss in class before the exam (and since the first mid-term).