Name of the Student: _____

Try to solve as many of the problems below as you can. Make sure that you attempt all.

Q 1

Solve exercises 8.6, 8.9, 8.17, 8.24, 8.26, 8.27 from Touretzky (1991).

Q 2

Write a function `MULTI-MEMBER` that checks if its first argument occurs more than once in the second.

Q 3

Write a function `REM-LAST`, which removes the last occurrence of its first argument from the second.

Q 4

Write a function `SUBSTITUTE`, with 3 arguments, say `old new exp` such that every occurrence of `old` at the top-level of `exp` is replaced by `new`. By "top-level" we mean the function should not check embedded levels in lists. E.g. `(substitute 'x 'k '(x (x y) z))` should return `(k (x y) z)`.

Q 5

Modify `SUBSTITUTE` to `D-SUBS` (for "deep substitute"), so that it does the replacement for *all* occurrences of `old`, no matter how deeply embedded.