Quiz 13a

1. (3 points) Write the logic rule(s) so that (list? \_\_\_\_\_\_\_\_) will be true if the thing in the blank is a proper list:

Query Input : (list? (a b c))

Query Output: (list? (a b c))

Query Input : (list? (a . b))

;; No Output

Query Input : (list? a)

;; No Output

1. (3 points) Write a set of rules and/or assertions in the query system to implement an **odd-length** relation like this:

Query Input: (odd-length (she loves you))

Query Output: (ODD-LENGTH (SHE LOVES YOU))

Query Input: (odd-length (day tripper))

;; No Output

Queries using **odd-length** should succeed for lists containing an odd number of elements, and should fail for lists containing an even number of elements.

**Do not use lisp-value!**

1. (4 points) You wish to write interleave (for finite lists) in the query evaluator. Here are some examples of interleave's behavior (you may assume it only needs to run forward):

Query Input : (interleave (a b) (1 2) ?what)

Query Output: (interleave (a b) (1 2) (a 1 b 2))

Query Input : (interleave (a b) (1 2 3) ?what)

Query Output: (interleave (a b) (1 2 3) (a 1 b 2 3))

Define all the rules necessary for interleave to work.