

LISP FUNCTION PROOFS ASSIGNMENT

1. Prove that the definition of `APPEND` is associative. In other words,
 $\text{APPEND}(x, \text{APPEND}(y, z)) \equiv \text{APPEND}(\text{APPEND}(x, y), z)$. [Hint: use induction on the length of the list bound to `x`.]
2. Show how the `FLAT` function can be transformed to yield the `FLAT2` function using the transformations we described in class for adding an accumulator variable and thereby making the function be tail recursive. The `FLAT` and `FLAT2` functions are given in the book *Notes on Data Structures* although in class we used the name `FLAT` to correspond to the `FLAT2` function.