MC28 Homework 6

Due November 30, 1995

These problems all relate to the handout on using EBNF to define languages.

1. Rewrite production(s) for conditionals and/or their clauses such that at least one clause is required *and* only the last can be an `else` clause. (There needn't be an `else` clause.)

2. The handout includes the production

   ⟨application⟩ ⟶ `(`⟨expression⟩ ⟨expression⟩`*)`

   rather than the equivalent

   ⟨application⟩ ⟶ `(`⟨expression⟩$^{+}$`)`

   (a) Why was this production written the longer way?

   (b) There is one other place in the "mini-scheme" grammar where a similar contraction is possible. Where? Why wasn't it done?

3. Why does the handout have two separate productions for ⟨number⟩s with decimal points in them? That is, why can't one production cover all the cases for numbers with decimal points?

4. Show the two parse trees for the ⟨snore⟩ `zzz`, thus proving that the grammar is ambiguous.