CSCI 330 Fall 2001

HOMEWORK 3

Assigned Wednesday, 01/9/12. Due Monday, 01/9/17

1. Show that the grammar of Figure 2.1 in the textbook is ambiguous by giving two parse tree (a.k.a. syntax trees) for the expression `a + 2 - b`.

2. Do exercise 1 on p.107 of the textbook.

3. This exercise is based on exercise 2 on p.107 in the textbook, which is incorrect, because in that grammar only assignment statements are terminated by semicolons, while conditional and loop statements are not terminated by a semicolon.

   (a) Modify the grammar of Figure 2.1 in the textbook in such a way that a sequence of statements uses the semicolon (`;`) to separate each statement from the successive one. In this case, we say that the semicolon is used as a statement *separator*; this is the choice made by Pascal.

   (b) Modify that grammar in such a way that each statement in a sequence of statements is terminated by a semicolon (`;`). In this case, we say that the semicolon is used as a statement *terminator*; this is the choice made by C (and C++ and Java).

   (c) Comment on the pragmatic differences between the two choices.