Quiz 3 Solutions

Quiz 3 was given in class on Friday, February 23, 2007.

1. [3.5 pts] What exactly does it mean for a CFG to be "ambiguous"?

A context-free grammar is *ambiguous* if there is at least one string w in its language, so that there is more than one parse tree whose yield is w (and whose root is labeled with the start symbol).

Slightly informally, a CFG is ambiguous if some string has more than one parse tree.

Equivalently, a CFG is ambiguous if there is some string that has more than one leftmost derivation (or more than one rightmost derivation).

2. [1.5 pts] True or false: Every language that can be represented by a CFG can be represented by a non-ambiguous CFG. *Circle one.*

TRUE   FALSE

Note: A language, representable by a CFG, that cannot be represented by a non-ambiguous CFG is said to be *inherently ambiguous*.