

CS 331 Programming Languages, Spring 2009  
**Quiz 3 Solutions**

Quiz 3 was given in class on Wednesday, February 11, 2009.

1. [2 pts] **Kinds of Parsers.** Name the two general classes of parsers.

The two general classes of parsers, as described in the text, are *top-down parsers* and *bottom-up parsers*.

2. [3 pts total] **Efficiency of Parsing.**

2a. [1.5 pts] What is the order (time complexity) of the best known algorithms that will parse based on any unambiguous grammar?

$O(n^3)$ , or cubic time.

2b. [1.5 pts] What is the order (time complexity) of the parsing algorithms that are actually used in compilers?

$O(n)$ , or linear time.