Homework 1: Syntax descriptions

Due before class on Sep 7, 2011

1. (15pts) Give a regular expression for each of the following languages.
   (a) The set of odd integer numbers (that is, integers that end with 1,3,5,7, or 9). For example, 125, -35, 21, 23 are all strings in the language, but 50 and 8 are not.
   (b) Strings over {a, b, c} that contain at least two *b*s. For example, *abab* and *cabbaacb* are in the language, but *ab* and *ac* are not.
   (c) Strings over $\{0, 1, 2\}$ that do not contain the substring 01.
2. (10pts) Build a NFA for the regular expression (1|0)*1. Convert your NFA to a DFA. While recommended, you are not required to give the ϵ-closure calculations.