

Computer Science 81, Spring 2007
Assignment 2
Due Wed. Jan. 31
Finite and Infinite-State Automata

Solve the indicated problems in the Kozen book.

1. [10 points] Page 302, #1.
2. [20 points] Page 303, #1d.
3. [20 points] Page 303, #2c. Use the derivatives method if possible, otherwise fall back to the NFA method.
4. [20 points] Page 305, #3 right.
5. [10 points] One of the rules for computing derivatives of regular-expressions requires information about whether the empty string is in a language represented by the expression. Give a way to derive this information syntactically using structural induction, without requiring construction of an automaton to get the information.
6. [20 points] Depict the abstract states and transitions of the non-regular language $\{x 0 x \mid x \in \{1\}^*\}$.