

Homework 8

CS 4313 – Spring 2003
Tom Bylander, Instructor

assigned March 26, 2003
due date April 2, 2003

1. (50 pts.) Write regular expressions for the following languages with alphabet $\{0, 1\}$ and where the string is interpreted as a binary number. Leading 0's are permitted. The empty string λ should be interpreted as the number 0.
 - (a) The number is odd.
 - (b) The number is greater than or equal to 8.
 - (c) The number is greater than 8.
 - (d) The number is a power of 2.
 - (e) The number is a power of 4.
2. (25 pts.) Do Exercise 9.2.3(c).
3. (25 pts.) Do Exercise 9.1.7(e).
4. (Extra Credit) Show that your answer for Exercise 9.1.7(e) is correct using the Turing machine simulator that you can download from the course web site.