Due Date: Wednesday, February 1, 2006.

There is a possible 51 points for this homework assignment.

**Problem 1.** (3 pts.) Exercise 2.14 on page 60 of the text.

**Problem 2.** (18 pts.) Exercise 2.16 on page 60 of the text.

**Problem 3.** (4 pts.) Exercise 2.17 on page 61 of the text.

**Problem 4.** (6 pts.) Exercise 2.19, parts a and b only, on page 61 of the text.

**Problem 5.** (6 pts.) Exercise 2.22 part a only, on page 62 of the text. Furthermore, provide an equivalent DFA

**Problem 6.** (8 pts.) Exercise 2.23 on page 63 of the text.

**Problem 7.** (6 pts.) Describe as simply as possible the language corresponding to each of the following regular expressions.

1. $0^*1(0^*10^*1)^*0^*$
2. $((0 + 1)^3)^*(\epsilon + 0 + 1)$
3. $(1 + 01)^*(0 + 01)^*$

**Problem 8.** (5 pts. Extra Credit) Exercise 2.18 on page 61 of the text.

**Problem 9.** (5 pts. Extra Credit) Exercise 2.20 on page 61 of the text.