

Due at the start of class Tuesday, September 27, 2005.

**Problem 1.** Do Exercises 2.25 (page 64) in Kinber and Smith.

**Problem 2.** Do Exercises 2.26 (page 64) in Kinber and Smith.

**Problem 3.** Consider the following regular expression:

$$a^*b^*(aa \cup bbb)^*$$

Convert this regular expression into a NDFA using the construction given in class.

**Problem 4.** Consider the following language over the alphabet  $\Sigma = \{a, b\}$ .

$$L = \{w \mid \text{all } a\text{'s in } w \text{ come before all } b\text{'s and } |w| \geq 1\}$$

- a. Give a DFA with at most four states that accepts  $L$ .
- b. Convert this DFA into a regular expression using the construction given in class. Simplify your final regular expression.