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 N DFA using the construction given in class.

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

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

- **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.