Homework 3, due Monday, February 4

READING: Chapters 4, 5, 6.

1. Exercise 1 on page 184. (20 points)

2. Exercise 11 on page 185. (20 points)

3. Design a DFA that accepts the language consisting of the set of those strings over \( \{a, b, c\} \) in which the number of \( a \)'s plus the number of \( b \)'s plus twice the number of \( c \)'s is divisible by six. (20 points)

4. Design an NFA that accepts the following language over the alphabet \( \{a, b, c\} \):

\[
(abc)^*(ab)^*
\]

(20 points)

5. Exercise 36 on page 187. (20 points)