Chapter 1: Non-deterministic Automata

Question 1: Question 1.10 part a, b

Question 2: Question 1.15

Question 3: Question 1.24

Question 4: Problem 1.32

Use the hint in the book, and process the input in reverse order. Construct an DFA that accepts \( B^R \). You do not need to prove that your construction is correct.

This is similar to the problem that we did on the board, in which we made a DFA that accepted any sequence of numbers in which the sum was divisible by 5.

Think carefully of what you want the states to be.

Question 5: Problem 1.41

Assume you have a DFA for \( A \) and \( B \). Give a construction of a DFA that accepts the perfect shuffle of \( A \) and \( B \).

Chapter 1: Regular Expressions

Question 6: Question 1.18 part a, b, i, j, k

Question 7: Question 1.19 part b, c

Question 8: Question 1.20 part b, c, e, g

Question 9: Question 1.21 part a

Make sure to give the intermediate GNFAs

Chapter 1: Pumping Lemma

Question 10: Question 1.29 Part b