COSC 341 – Tutorial 4

1. Give a recursive definition of the set B of unlabelled complete binary trees.
2. Show that the power set $\mathcal{P}(\mathbb{N})$ of $\mathbb{N}$ is uncountable.
3. Design a finite automaton on the alphabet $\{a, b\}$ that accepts:
   (a) all words starting with ab
   (b) all words containing the substring bb

Homework

1. Design a finite automaton on the alphabet $\{a, b\}$ that accepts:
   (a) all words containing exactly two a's
   (b) all words of even length
   (c) all words consisting of an even number of a's and an even number of b's
2. Give a simple recursive definition of the language Eq consisting of strings over $\{a, b\}$ which have an equal number of a's and b's.