Homework 8 — Due: Tuesday, October 25, 2022

Please submit your work on Brightspace, in PDF format only.

1. Find a context-free grammar that generates the language

$$L = \{0^n 1^{2n} \mid n \geq 0\}.$$

2. Find a context-free grammar that generates the language

$$L = \{x \in \{a, b\}^* \mid x \text{ has the same number of } a\text{'s as } b\text{'s}\}.$$

3. Describe, in English and/or by a regular expression, the language that is generated by the following context-free grammar:

$$S \longrightarrow aS \mid aSbS \mid \epsilon.$$

4. Construct a context-free grammar to generate all regular expressions over alphabet $\{a, b\}$.