
Homework 11 — Due: Tuesday, November 15, 2022

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

1. Do Sipser, Exercise 3.6, page 188.

2. Do Sipser, Exercise 3.7, page 188.

3. Give an implementation-level description of a Turing machine that decides the following language:

   $$\{0^m\#0^n\#0^p \mid m \geq 0, n \geq 0, p \geq 0, m + n = p\}.$$

   Besides the implementation-level description, include commentary that explains how your Turing machine functions.

4. Give a high-level description of a Turing machine that decides the following language:

   $$\{0^n\#0^{2^n} \in \{0,1\}^* \mid n \geq 0\}.$$

5. Do Sipser, Problem 3.12, page 189.