

BLG311E: Formal Languages and Automata

Homework #4

Due Date: 10.12.2014, 21:00

Submission Date: 11.12.2014, First Lecture Hour

1) Give TM state diagram for monus subtraction (Example2 in the class notes on TM)

$$\begin{aligned} & \text{"m -- n"} = \max\{m-n, 0\} \\ 0^m 1 0^n & \implies \dots B 0^{m-n} B.. \text{ (if } m > n\text{)} \\ & \dots BB\dots B.. \text{ (otherwise)} \end{aligned}$$

2) Give TM state diagram for multiplication (Example3 in the class notes on TM)

$$0^m 1 0^n \text{ (input),} \quad 0^{mn} 1 \text{ (output)}$$

In your answers, use the pseudocodes given on the related lecture slides.