

LOGIC & AUTOMATA — HOMEWORK 2

Due: Friday 22 February, 3pm

1. Construct nondeterministic bottom-up tree automata accepting the following tree languages over the alphabet $\{a, b\}$:
 - trees T in which every node is labeled a ;
 - trees T that have a branch (i.e., a path from the root to a leaf) of even length.

Each one is worth 1 mark.

2. For each of the two languages above, write an MSO sentence that defines it. Each is worth 1 mark.
3. Write an MSO sentence that defines the set of trees in which there is a branch labeled only with as . (1 mark as well).