

# Languages, automata and computation II

## Homework 2

### Problems: deadline XX/12/2024

**Problem 1.** A *parametric finite weighted automaton* is a finite weighted automaton where the initial vector, the final vector, and the transition matrices can contain one parameter  $p$  (interpreted in the field of rational numbers). Formally, their entries are univariate polynomials in  $\mathbb{Q}[p]$ . Show that the set of rational number values for the parameter  $p$  s.t. the automaton has the zero semantics has measure either 0 or 1.

**Problem 2.**

**Problem 3.**