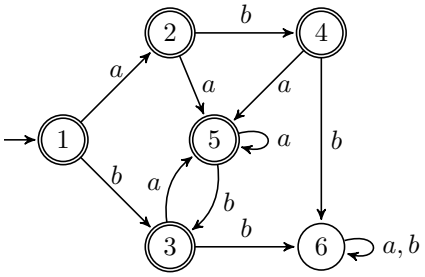
Technische Universität München **Winter term 2015/16**
I7
Prof. J. Esparza / Dr. D. Suwimonteerabuth / Dr. C. Broadbent **23.10.2015**

Automata and Formal Languages — Homework 3

Due 30.10.2015

Exercise 3.1
Let A be the following automaton:



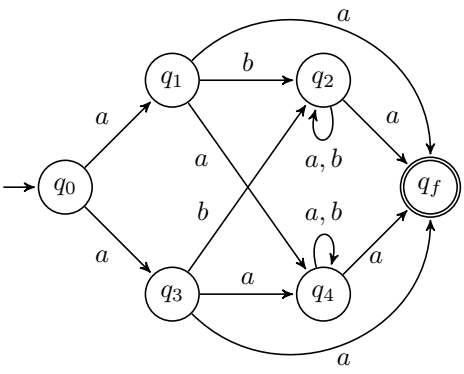
(a) Compute the language partition P_l of A.

(b) Construct A/P_l, i.e. the quotient of A with respect to the partition P_l.

(c) For each state of A/P_l, describe its corresponding residual.

Exercise 3.2
Consider the language partitioning algorithm *LanPar* from the lecture. What is the maximum number of times that the while loop can be executed? Give an example that demonstrates such maximum.

Exercise 3.3
Consider the following NFA A:



(a) Describe $L(A)$ in words.

(b) Compute CSR of A using the algorithm presented in the lecture.

(c) Construct A/CSR.