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LEHRSTUHL FÜR INFORMATIK 2
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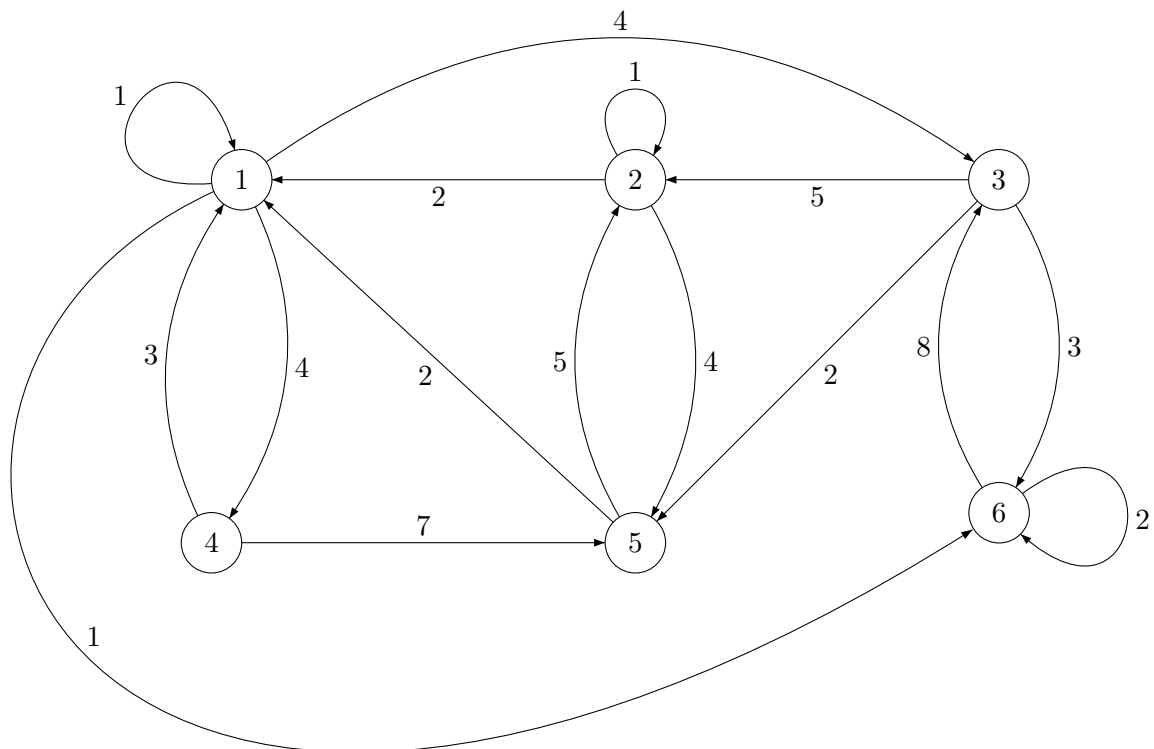# Modeling and Verification of Probabilistic Systems
Summer term 2014

– Series 8 –

Hand in on July 3 before the exercise class.

Exercise 1 (3 points)

Consider the following CTMC C

with initial distribution $p(0) = (0.1, 0.2, 0, 0, 0.4, 0.3)$.

a) Give $C/{\sim_m}$!

b) Determine the steady–state distribution $\vec{p} = (p_1, \ldots, p_6)$ of C which is given as follows:

$$\vec{p} \cdot (\mathbf{R} - \mathbf{r}) = 0, \text{ with } \sum_{i=1}^{6} p_i = 1$$

Exercise 2 (2 points)

Prove that exponential distributions are not closed under maximum!

Exercise 3 (5 points)

Prove the "useful lemma" on Slide 22 of Lecture 14!