

Exercise 1, Chapter 5

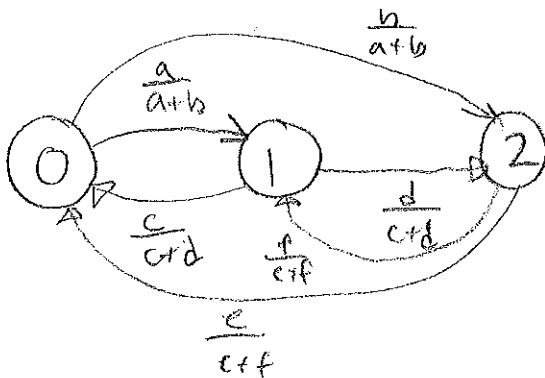
$$Q = \begin{pmatrix} -a-b & c & e \\ a & -c-d & f \\ b & d & -e-f \end{pmatrix} \text{ der } a, b, c, d, e \text{ \& } f \text{ positive}$$

$$= \begin{pmatrix} q_{00} & q_{01} & q_{02} \\ q_{10} & q_{11} & q_{12} \\ q_{20} & q_{21} & q_{22} \end{pmatrix}$$

mat 182: $T = \begin{pmatrix} 0 & -\frac{q_{01}}{q_{11}} & -\frac{q_{02}}{q_{22}} \\ -\frac{q_{10}}{q_{00}} & 0 & -\frac{q_{12}}{q_{22}} \\ -\frac{q_{20}}{q_{00}} & -\frac{q_{21}}{q_{11}} & 0 \end{pmatrix}$
 $\forall q_{ii} \neq 0$

$$= \begin{matrix} 0 & 1 & 2 \\ \begin{pmatrix} 0 & \frac{c}{c+d} & \frac{e}{e+f} \\ \frac{a}{a+b} & 0 & \frac{f}{c+f} \\ \frac{b}{a+b} & \frac{d}{c+d} & 0 \end{pmatrix} \end{matrix}$$

Embedded Markov Chain:



Tilstandene er rekurrente, fordi vi har en lukket klasse.
 (Theorem 2.7 s. 67)