

3. Klausur



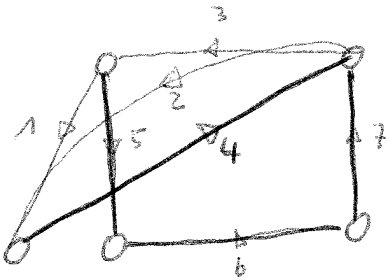
1) geg: \vec{u} ges: \vec{s}



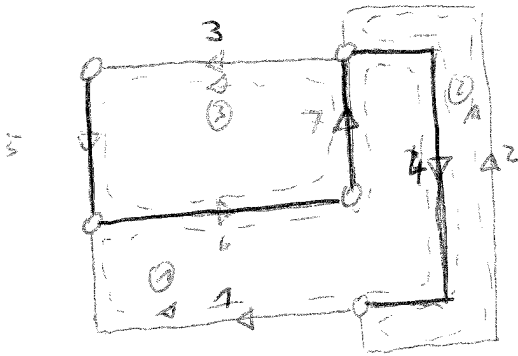
$$\vec{u} = \begin{bmatrix} 1 & 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & -1 \\ 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 1 & 1 \end{bmatrix}$$

$$\vec{s} = [-1 \ 1 \ -1 \ -1 \ 1]$$

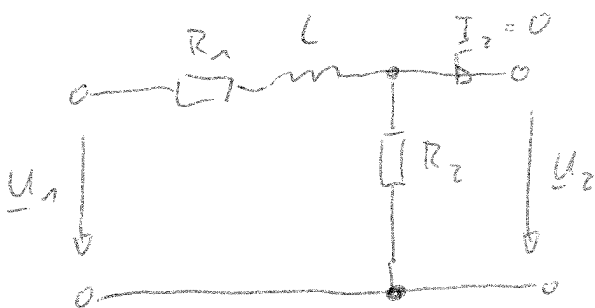
3)



$$\vec{u} = \begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 1 & 1 & 1 \end{bmatrix}$$



5)

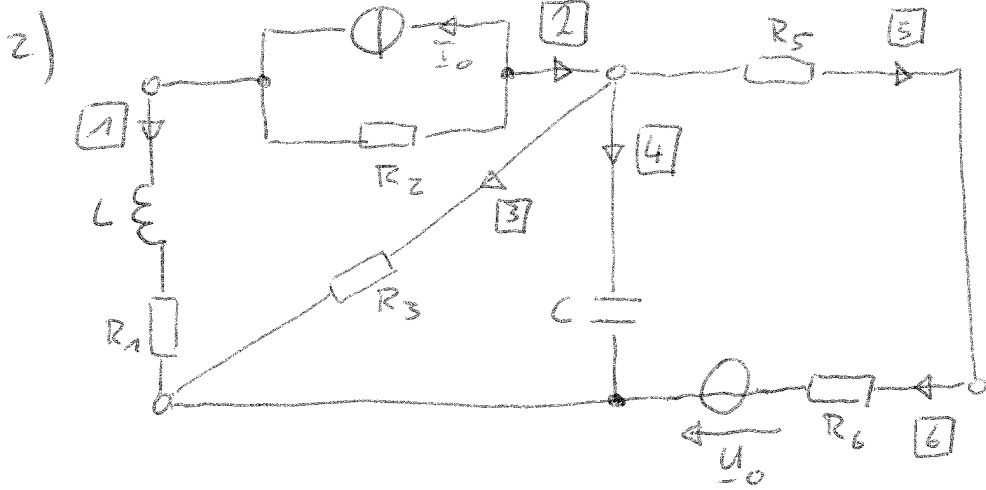


$$\underline{G} = \frac{\underline{u}_2}{\underline{u}_1}$$

Zeichne
Frequenz. outsk.

$$\underline{u}_2 = \underline{u}_1 \frac{R_2}{R_2 + R_1 + j\omega L}$$

$$\underline{G} = \frac{\underline{u}_2}{\underline{u}_1} = \frac{R_2}{R_2 + R_1 + j\omega L}$$



ges: - Zweigimpedanzmatrix
- Quellenmatrizen

$$\underline{\tilde{u}}_4 = [0 \ 0 \ 0 \ 0 \ 0 \ u_0]^T$$

$$\underline{\tilde{i}}_2 = [0 \ -I_0 \ 0 \ 0 \ 0 \ 0]^T$$

$$\underline{Z} = \begin{bmatrix} R_1 + j\omega L & 0 & 0 & 0 & 0 & 0 \\ 0 & R_2 & 0 & 0 & 0 & 0 \\ 0 & 0 & R_3 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{1}{j\omega C} & 0 & 0 \\ 0 & 0 & 0 & 0 & R_5 & 0 \\ 0 & 0 & 0 & 0 & 0 & R_6 \end{bmatrix}$$

4)

~~Vorgehen~~

ca. obige Schaltung, Knoten waren nummeriert.

ges: Graph (orientiert) der Schaltung sowie reduzierte

Knoten-Zweig-Impedanzmatrix bei geg. Referenzknoten!

Lg Südi