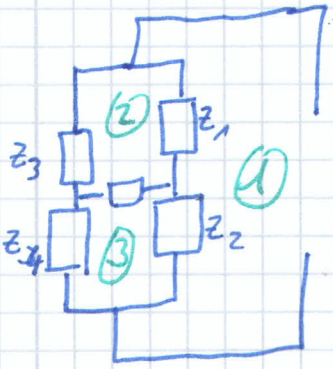
Elektronik

Blatt 1)



Maschen

(1) $-U_0 + I_1 Z_1 + I_2 Z_2 = 0$ (1)

(2) $-I_1 Z_1 + I_3 Z_3 + I_6 R_6 = 0$ (2)

(3) $-I_2 Z_2 + I_4 Z_4 + I_6 R_6 = 0$ (3)

Knoten

$I = I_3 + I_1 = I_2 + I_4$ (A)

$I_1 + I_6 = I_2$ (B)

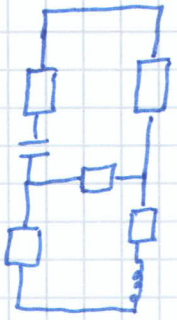
$I_3 = I_6 + I_4$ (C)

$I_6 \to 0$

(B) $I_2 = I_1$

(C) $I_3 = I_4$

$\Rightarrow \frac{(2)}{(3)} = \frac{R_3}{R_4} = \frac{R_1}{R_2}$

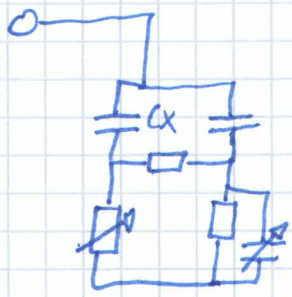


Phasenbed.: $\varphi_1 + \varphi_4 = \varphi_2 + \varphi_3$

$X_C = \frac{1}{i\omega C}$

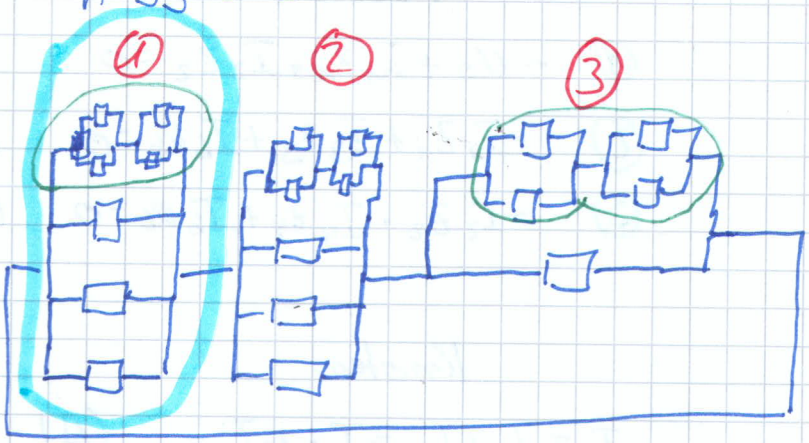
Aufgabe 2

c)



Kapazitäten lassen sich messen

Aufgabe 3



Alle $\square = R$

// $\frac{1}{2}R + \frac{1}{2}R = R$

// $\frac{1}{4}R$

① = ② ③ = $\frac{R}{2}$

$\Rightarrow \Sigma = \frac{R}{2}$

$\sum_{1,2,3} = R$