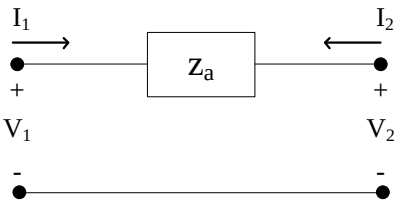
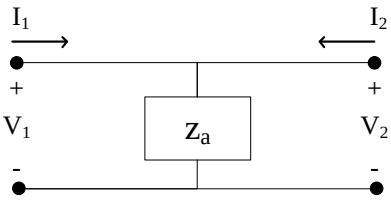
EEE 33 1s1112: Homework 8

1. Determine the **z**, **y**, **h** and **t** parameters for the following networks:

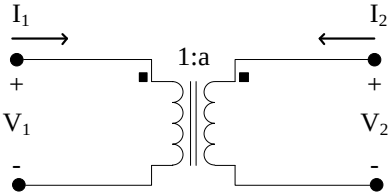
a.



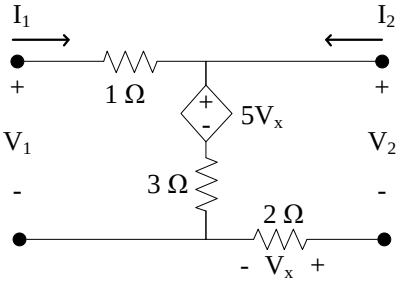
b.



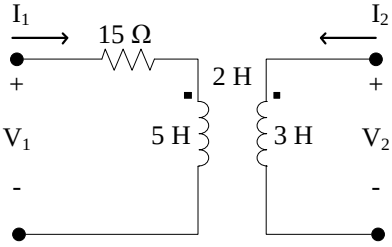
c.



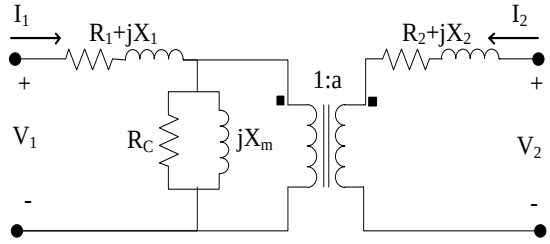
d.



e.



2. The next figure shows the model for a non-ideal transformer. The model contains resistances, inductances, and an ideal transformer. Find the model's **t** parameters by
a. using circuit analysis.
b. using the t parameters derived in (1a), (1b), and (1c).



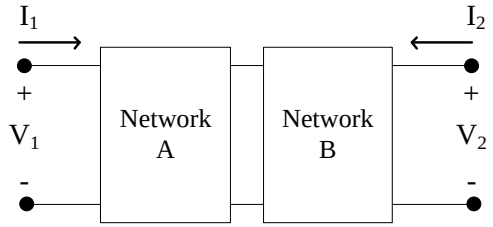
$R_1 = 0.650\ \Omega$ $R_C = 30.86\ k\Omega$
$X_1 = 8.40\ \Omega$ $X_m = 4.46\ k\Omega$
$R_2 = 0.00650\ \Omega$ $a = 0.1$
$X_2 = 0.00840\ \Omega$

3. The **z** parameters for networks A and B are

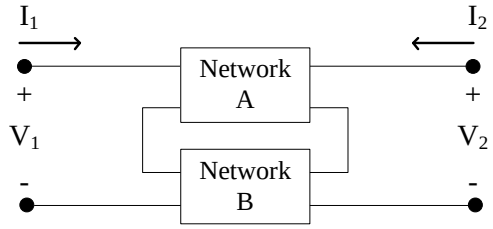
$$\mathbf{Z_A} = \begin{bmatrix} Z_{A,11} & Z_{A,12} \\ Z_{A,21} & Z_{A,22} \end{bmatrix}, \quad \mathbf{Z_B} = \begin{bmatrix} Z_{B,11} & Z_{B,12} \\ Z_{B,21} & Z_{B,22} \end{bmatrix}$$

Determine the z parameters of

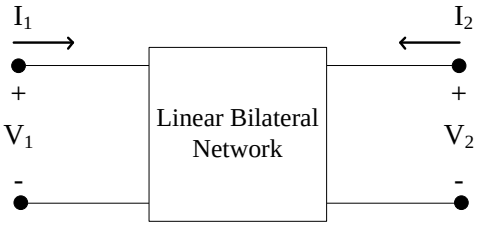
a.



b.



4. Determine the **z**, **y**, **h**, and **t** parameters of the network from the tabulated data.



V_1	I_1	V_2	I_2
50 V	4 A	60 V	-6 A
180 V	32 A	80 V	-28 A

~ End of Homework ~