

EE332 Introduction to Power Systems Engineering Homework 2

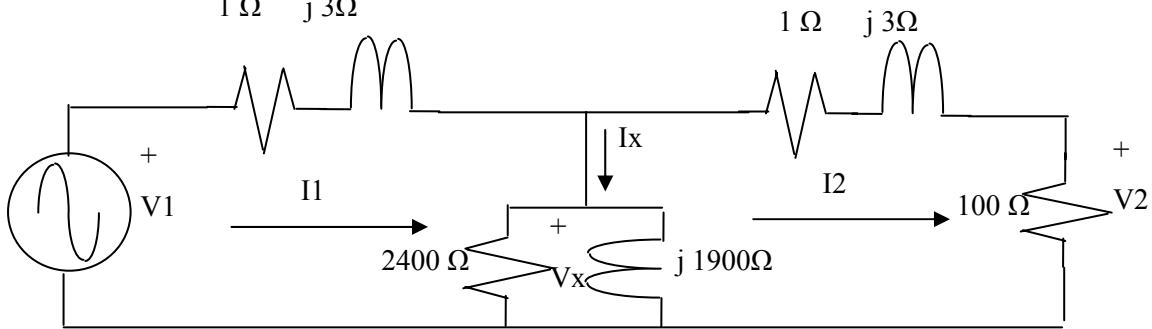
Assigned 8/25/08 Due 9/1/08

Feel free to bring up homework questions in class.

1. The circuit below is a 'circuit model' for a power transformer.

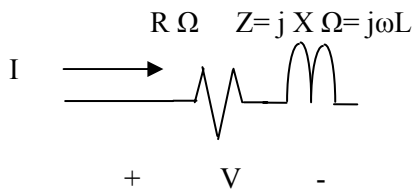
Given $V_2 = 120/\underline{0}$ V RMS, 60 Hz

Find I_2, I_x, I_1 and V_1



Ans: $V_1 = 122.856/\underline{3.404}^\circ$

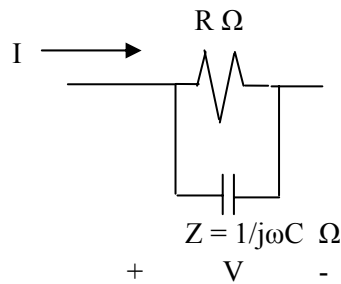
2. In the circuits below assume that voltages and currents are 60 Hz ac. The Values given are in RMS (root mean square) Determine component values (R and L or C)



$$V = 120/\underline{0} \text{ V}$$

$$I = 16/\underline{-30} \text{ A}$$

Ans: $R = 6.495 \text{ ohm}$



$$V = 120/\underline{0} \text{ V}$$

$$I = 15/\underline{+30} \text{ A}$$

Ans: $C = 165.8 \mu\text{F}$