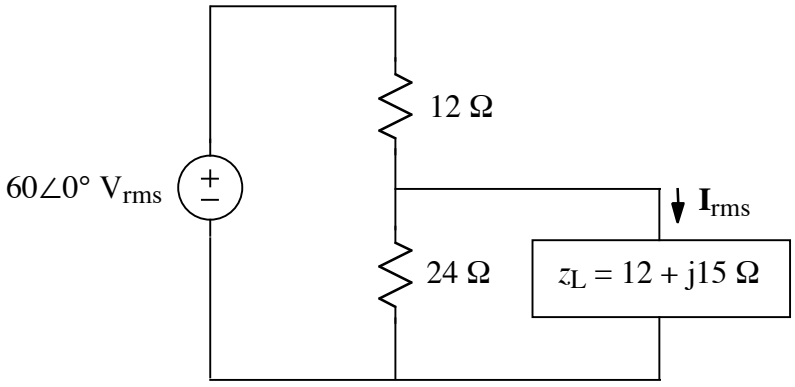
HOMEWORK #8

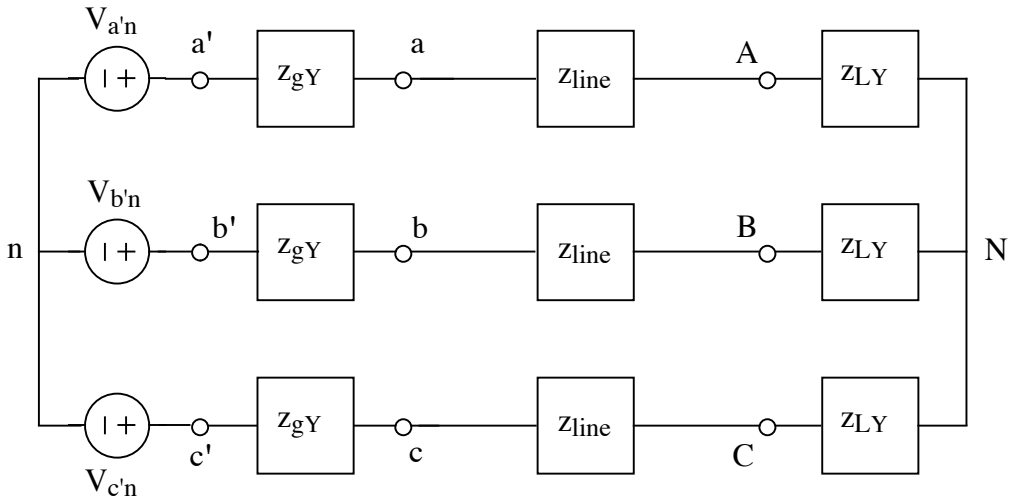
1.



a) Calculate the value of rms current, $\mathbf{I}_{rms}$, flowing through z_L.

b) Calculate the complex power, S, for z_L. Include appropriate units.

2.



$V_{a'n} = 82\angle 0°$ V $\quad z_{gY} = 0.1\ \Omega$

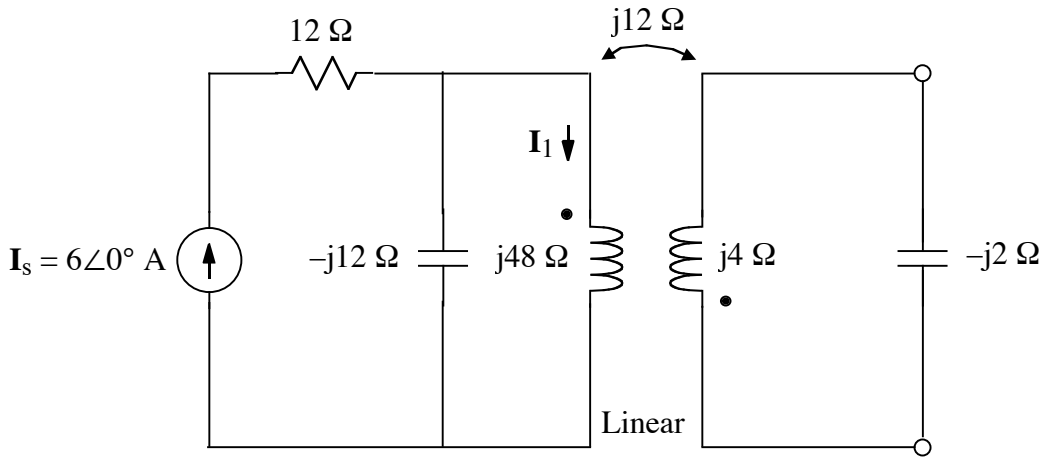
$V_{b'n} = 82\angle 120°$ V $\quad z_{line} = 39 + j5\ \Omega$

$V_{c'n} = 82\angle -120°$ V $\quad z_{LY} = 0.9 + j4\ \Omega$

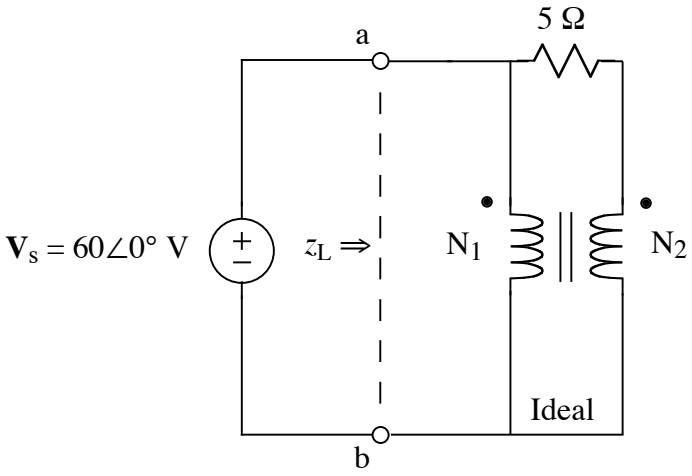
a) Draw a single-phase equivalent circuit.

b) Calculate $\mathbf{V}_{AB}$.

3.



a) Calculate the numerical value of phasor current $\mathbf{I}_1$.



b) Given $N_1/N_2 = 9$, calculate the impedance, z_L, seen by the voltage source in the above transformer circuit.