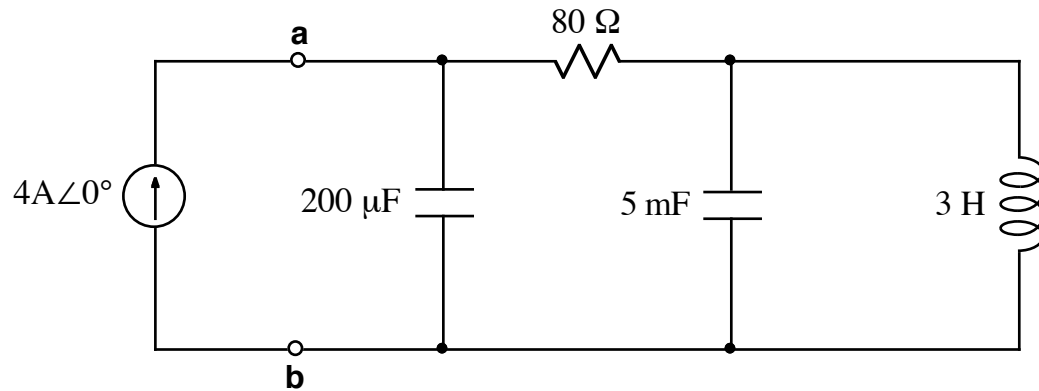


1.

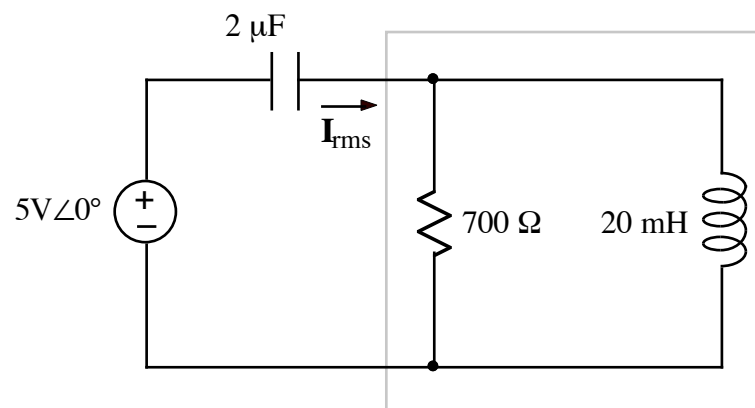


Note: $\omega = 10$ r/s.

Do the following for the impedance to the right of the a, b terminals:

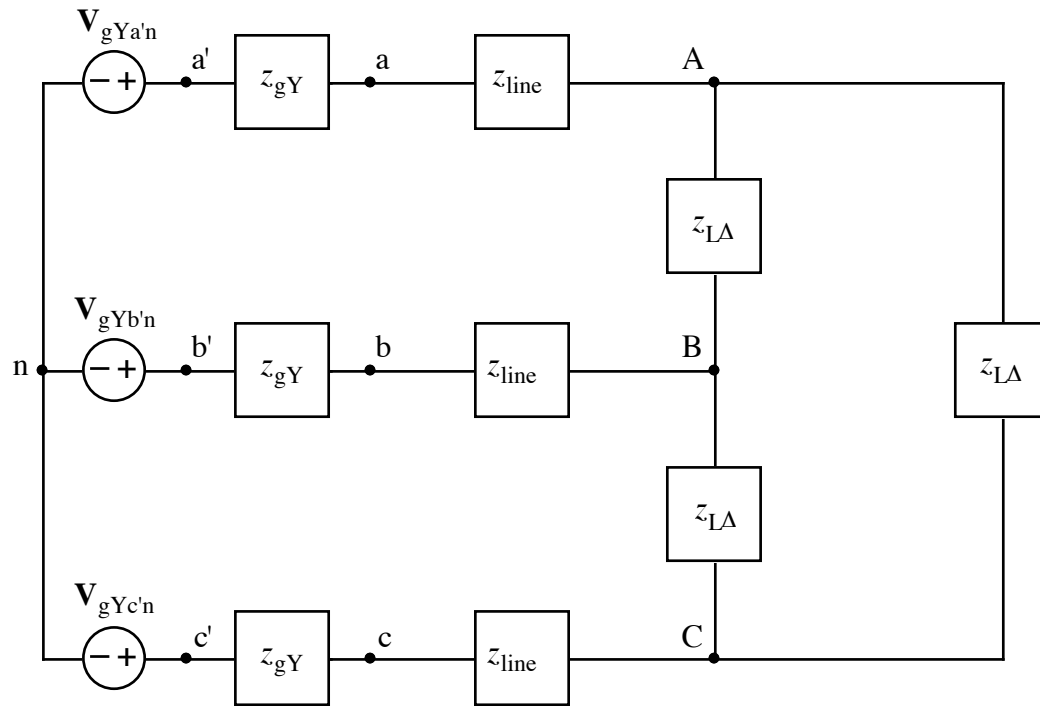
- Calculate complex power $S = P + jQ$.
- Calculate average (or DC) power.
- Calculate maximum instantaneous power.
- Sketch the power waveform, $p(t)$.

2.



- Calculate I_{rms} . Note: $\omega = 5$ kr/s.
- Calculate the complex power, S , for the components inside the box.

3.



$$V_{gYa'n} = 101 \angle 0^\circ \text{ V} \quad z_{gY} = 1 + j0.2 \, \Omega$$

$$V_{gYb'n} = 101 \angle -120^\circ \text{ V} \quad z_{line} = 6 + j0.3 \, \Omega$$

$$V_{gYc'n} = 101 \angle +120^\circ \text{ V} \quad z_{L\Delta} = 9 - j1.5 \, \Omega$$

- Draw the single phase equivalent circuit.
- Calculate I_{BC} .