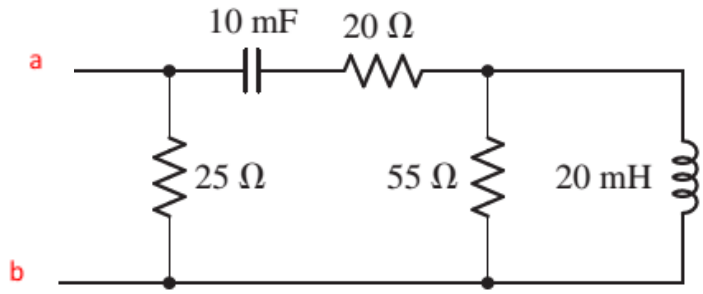
Lista de Exercícios 1 – Circuitos Elétricos

1. Considere o circuito representado a seguir e determine a impedância equivalente entre os terminais a e b indicados, sendo (a) ω=1rad/s; (b) ω=10rad/s; (c) ω=100rad/s.



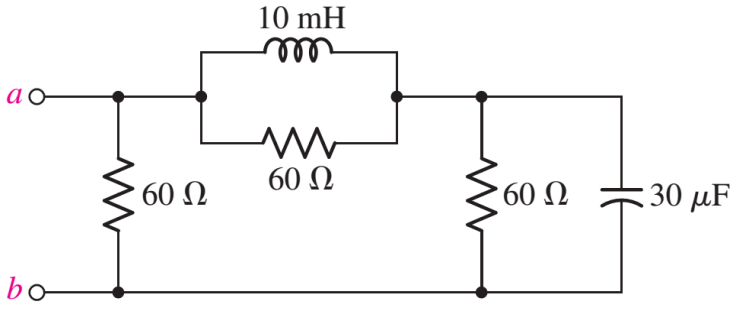
Resposta:

a) $23.24\angle -12.9°\ \Omega$

b) $12.08\angle -13.78°\ \Omega$

c) $11.14\angle -1.54°\ \Omega$ Corrigido: 11.54<1.57º

2. Considere o circuito representado a seguir e determine a impedância equivalente entre os terminais a e b indicados, sendo a frequência de operação do circuito: (a) 1 Hz; (b) 1 kHz; (c) 1 MHz; (d) 1 GHz; (e) 1 THz.



Resposta:

(a) $30 - j0.154\ \Omega$

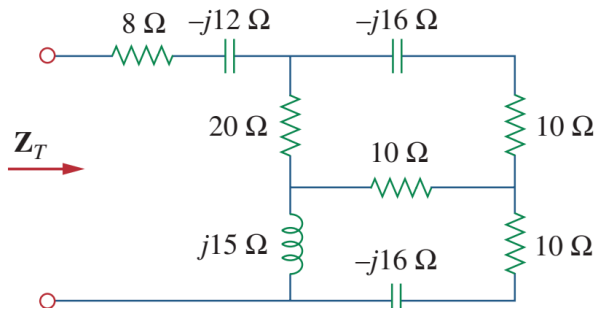
(b) $23.5 + j9.83\ \Omega$

(c) $30 + j0.013\ \Omega$

(d) $30 + j1.3\times10^{-5}\ \Omega$

(e) $30 + 1.3\times10^{-8}\ \Omega$

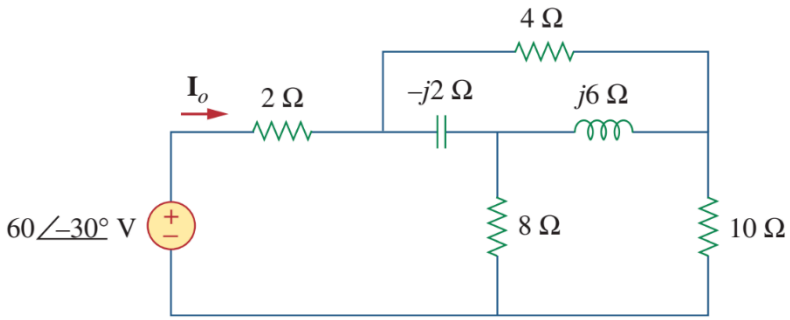
3. Determine $\mathbf{Z}_T$ no circuito a seguir.



Resposta:

34.69 – j6.93

4. Determine $\mathbf{I}_0$ no circuito a seguir.



Resposta:

8.873∠-21.67º