Due Date: 23:59, Nov.27 ,2022
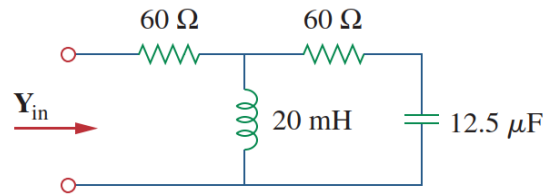
Exercise 5.1 (30%)
(a) Find the equivalent admittance of the circuits at $\omega = 50\,rad/s$.
(b) Find the equivalent admittance of the circuits at $\omega = 50\,rad/s$.
(c) Find the equivalent impedance Z_{ab}.

(a)

(b)

(c)

Exercise 5.2 (30%)

(a) (15%) Calculate the Thevenin impedance between terminal a and b if the frequency of operation is $(50/\pi)$ kHz.

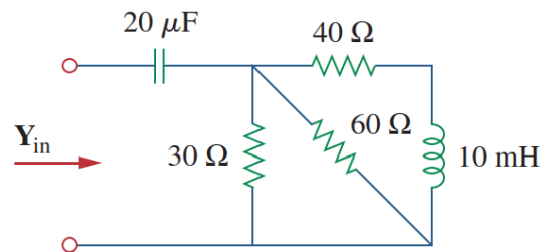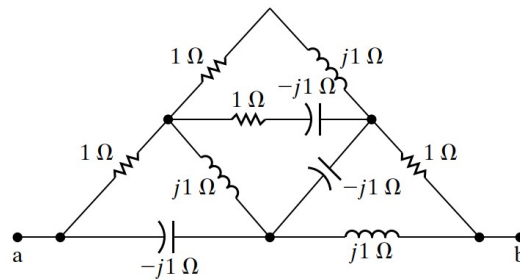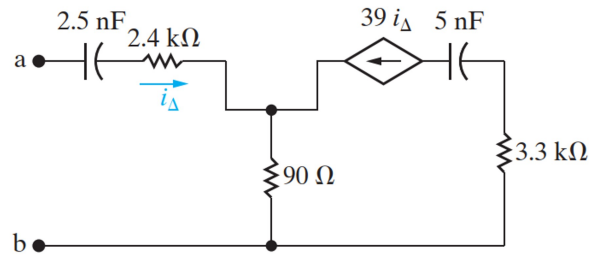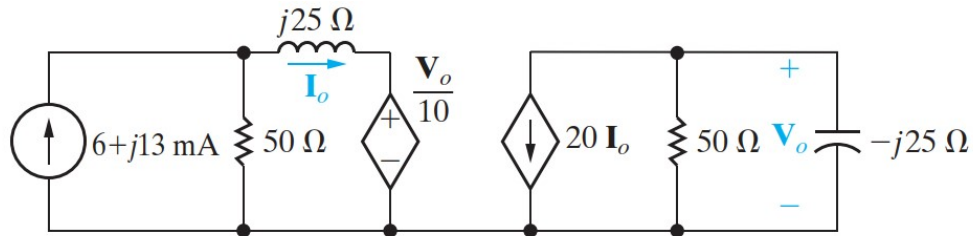

(b) (15%) Find V_0 and I_0 shown in the figure below.

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Exercise 5.3 (40%)

(a) (30%) Please find the Thevenin equivalent circuits between terminal a and b under $\omega = 2000rad/s$ and $\omega = 4000rad/s$.

(Hint: Consider whether to turn on or turn off the voltage source and current source based on the frequency you choose.)

(b) (10%) Please draw two phasor diagrams of the two Thevenin equivalent impedances under two frequencies ($\omega = 2000rad/s$ and $\omega = 4000rad/s$).