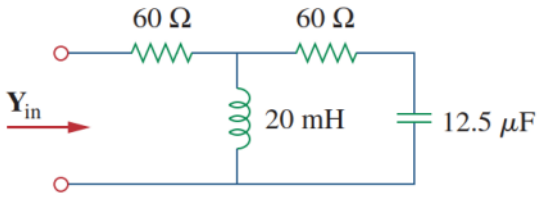
VE215 2023Su Assignment 5

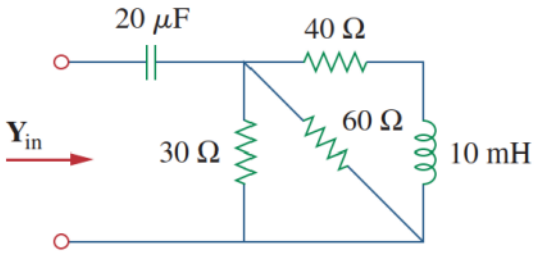
Due Date: 23:59, July.4th, 2023

In order to get full marks, you shall write all the intermediate steps of calculation or proof unless otherwise indicated.

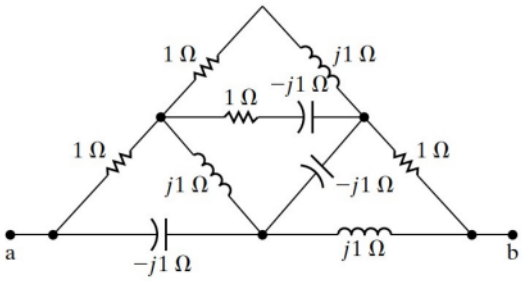
Exercise 3.1 (30%)
(a) (10%) Find the equivalent admittance of the circuits at $\omega = 50\ rad/s$.
(b) (10%) Find the equivalent admittance of the circuits at $\omega = 50\ rad/s$.
(c) (10%) Find the equivalent impedance Z_{ab}.



(a)



(b)



(c)

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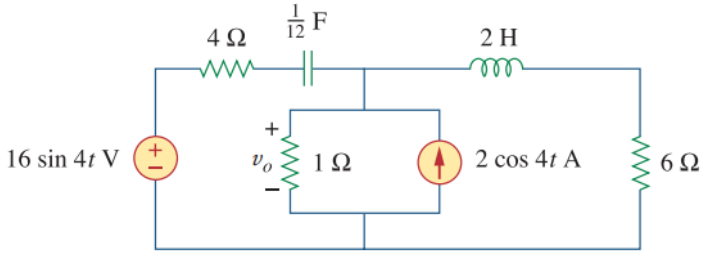
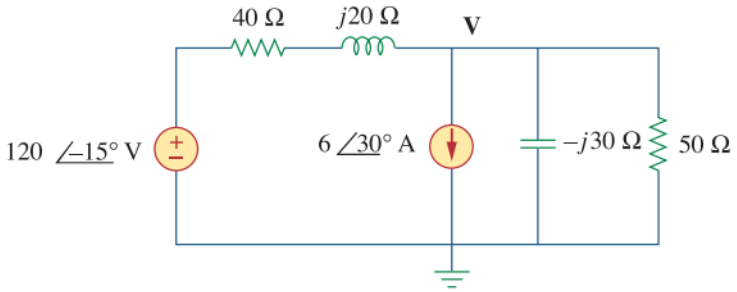
Exercise 3.2 (30%)

(a) (15%) Determine v_0 in the circuit below.



(b) (15%) Use nodal analysis to find **V** in the circuit below.



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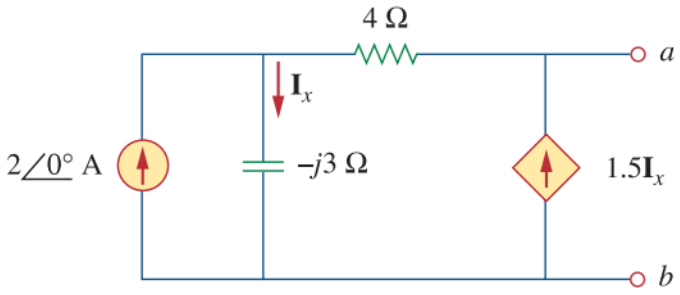
Exercise 3.3 (40%)

(a) (20%) Find the Thevenin equivalent at terminal a-b of the circuit below. And also draw the phasor diagram of the Thevenin equivalent impedance.



(b) (20%) Find the Norton equivalent at terminal a-b of the circuit below. And also draw the phasor diagram of the Norton equivalent impedance. Take $\omega = 10\ rad/s$.