

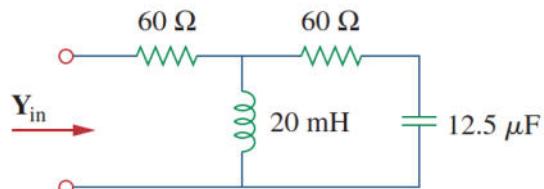
# VE215 2025Su Assignment 5

Due Date: 23:59, July.10th, 2025

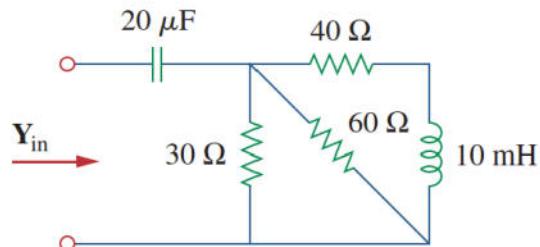
In order to get full marks, you shall write all the intermediate steps of calculation or proof unless otherwise indicated.

## Exercise 5.1 (25%)

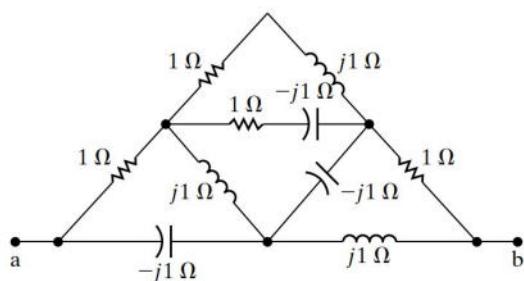
- (a) (5%) Find the equivalent admittance of the circuits at  $\omega = 50 \text{ rad/s}$ .
- (b) (10%) Find the equivalent admittance of the circuits at  $\omega = 50 \text{ rad/s}$ .
- (c) (10%) Find the equivalent impedance  $Z_{ab}$ .



(a)



(b)



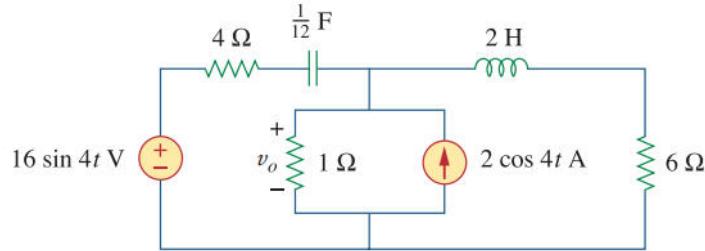
(c)

# VE215 2025Su Assignment 5

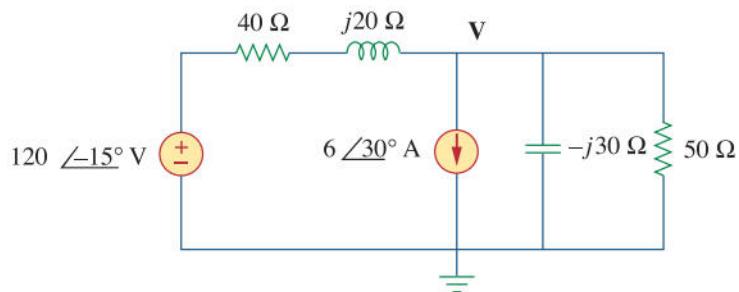
Exercise 5.2 (30%)

(a) (15%)

Determine  $v_o$  in the circuit below.



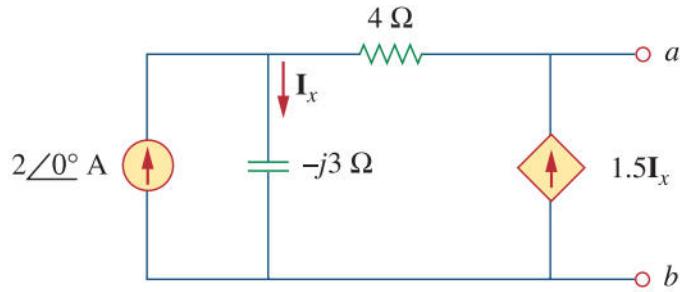
(b) (15%) Use nodal analysis to find  $\mathbf{V}$  in the circuit below.



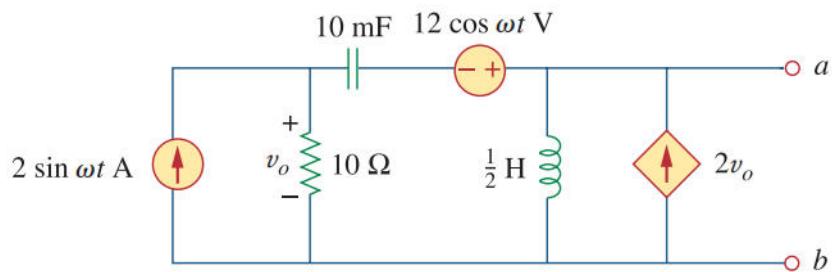
# VE215 2025Su Assignment 5

## Exercise 5.3 (30%)

(a) (15%) Find the Thevenin equivalent at terminal a-b of the circuit below. And also draw the phasor diagram of the Thevenin equivalent impedance.



(b) (15%) Find the Norton equivalent at terminal a-b of the circuit below. And also draw the phasor diagram of the Norton equivalent impedance. Take  $\omega = 10 \text{ rad/s}$ .



# VE215 2025Su Assignment 5

## Exercise 5.4 (15%)

Determine  $v_o(t)$  in the op amp circuit in the figure bellow.

