1. Write the following sinusoids as phasors

$v_1(t) = 156 \cos(110\pi t + 60°)$

$v_2(t) = 220 \cos(120\pi t - 45°)$

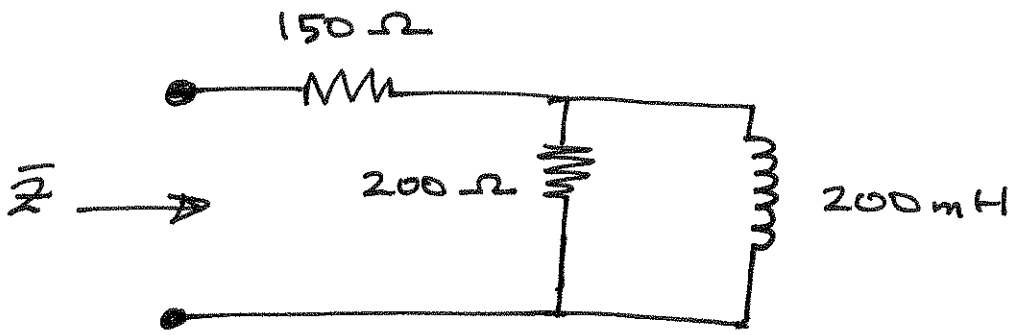
2. Write the following phasors as sinusoids. $\omega = 20$ rad/sec

$\bar{V}_1 = 20 \angle 15°$

$\bar{V}_2 = 10 \angle 45°$

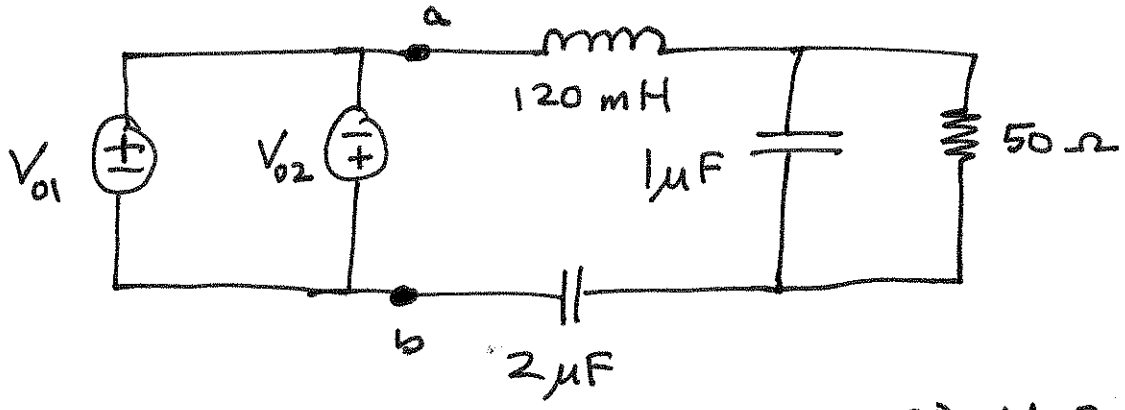
$\bar{V}_3 = \bar{V}_1 + \bar{V}_2$

3. Find the total impedance of the circuit.



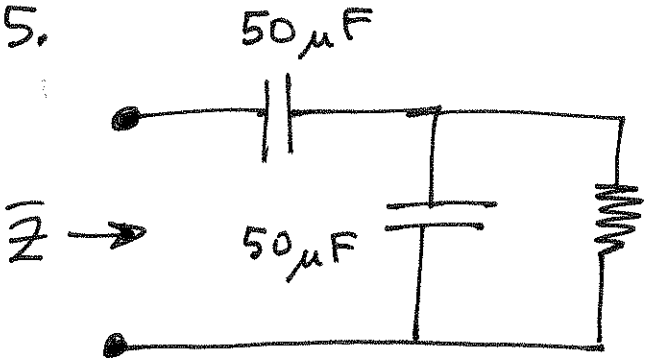
$\omega = \frac{200}{\pi}$ Hz

4. What is $\bar{Z}_{eq}$ as seen by the two voltage sources? (or to the right of nodes a and b)



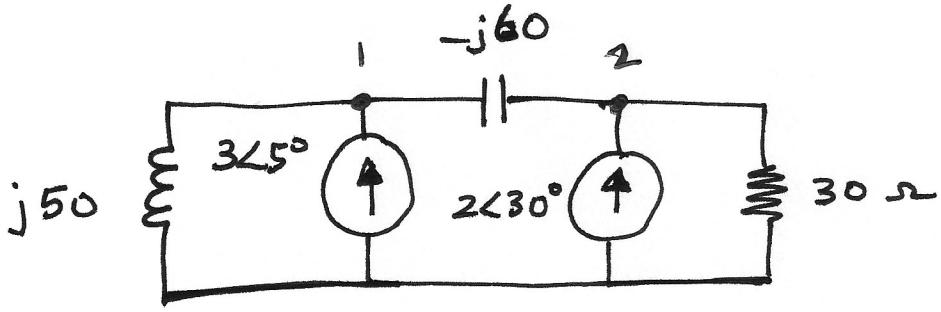
$\omega = 250 \frac{rad}{sec}$ $V_{01} = 20\angle 18^\circ$ $V_{02} = 18\angle 20^\circ$

5.

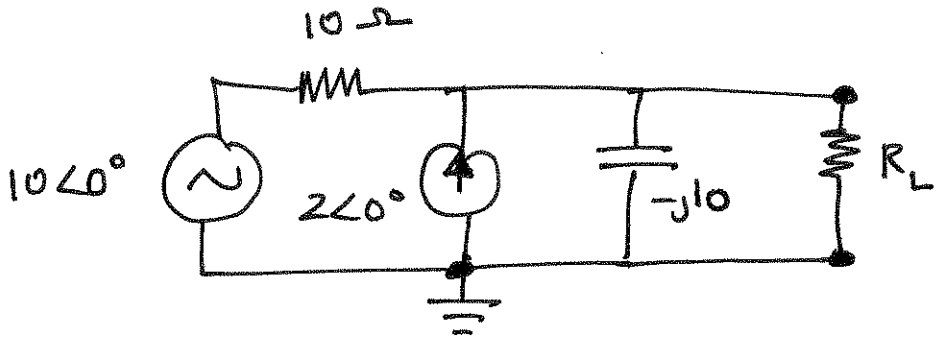


What is ω for the circuit if $\bar{Z} = 48.4125 - j137.5\ \Omega$

6. Find voltages $\bar{V}_1$ and $\bar{V}_2$.

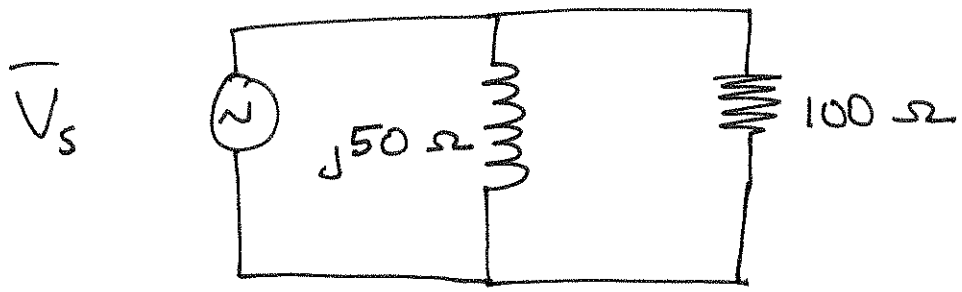


7. Find the Thevenin equivalent circuit as seen by the load resistor.

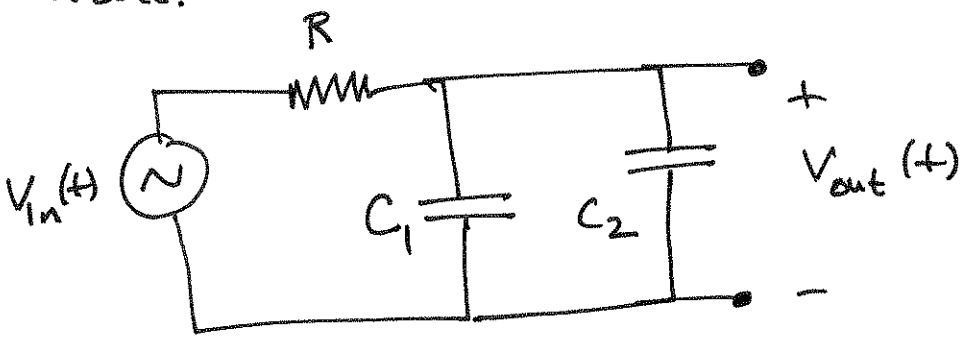


8. Find the Norton equivalent circuit for the circuit in problem 7.

9. Find the average power & reactive power generated by the resistor in the circuit if $\bar{V}_s = 160 \angle 30°$



10. Find the transfer function. Write the magnitude in terms of decibels.



$R = \frac{500}{\pi}\ \Omega$ $\quad C_1 = 3.75\,\mu F$ $\quad C_2 = 7.5\,\mu F$