

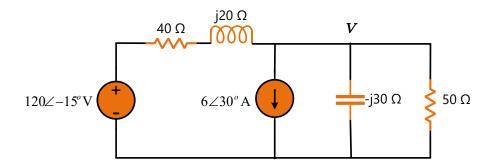
ELEC 1111 - Electric Circuits Tutorial 8 - AC Analysis II

Australia's Global University

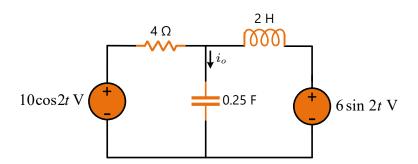
Faculty of Engineering

School of Electrical Engineering and Telecommunications

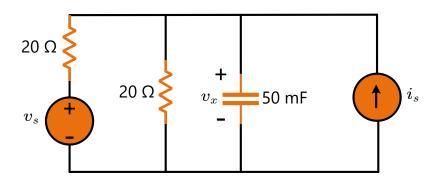
1. Using nodal analysis, calculate the voltage ${f V}$ in the following circuit.



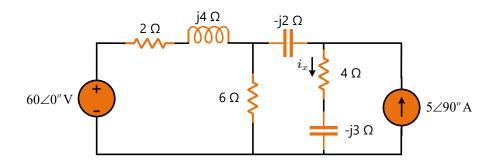
2. Using mesh analysis, calculate i_o in the following circuit.



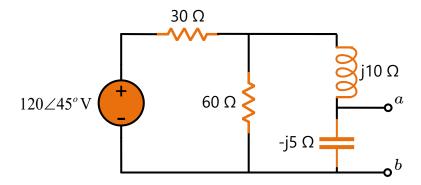
3. Using the principle of superposition, calculate v_x in the following circuit, if $v_s=50\sin 2t$ V and $i_s=12\cos(6t+10^\circ)$ A.



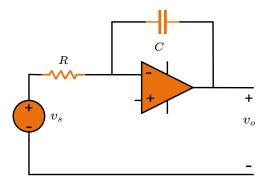
4. Using source transformation, calculate the current $\mathbf{I}_{\mathbf{x}}$ in the following circuit.



5. Calculate the Thevenin and Norton equivalent circuits at terminals a and b of the following circuit.



6. For the integrator of the following figure, calculate $V_{\circ}/v_{\rm s}.$



7. Evaluate the voltage gain $A_v = V_{\circ}/v_s$ in the following circuit. Find the gain when $\omega = 0$ and when $\omega \to \infty$.

