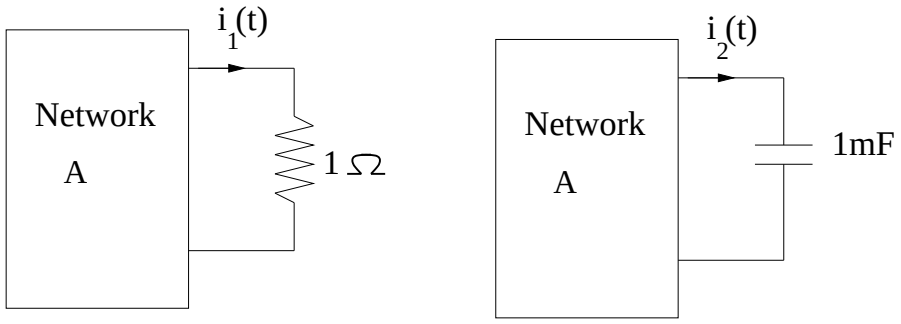
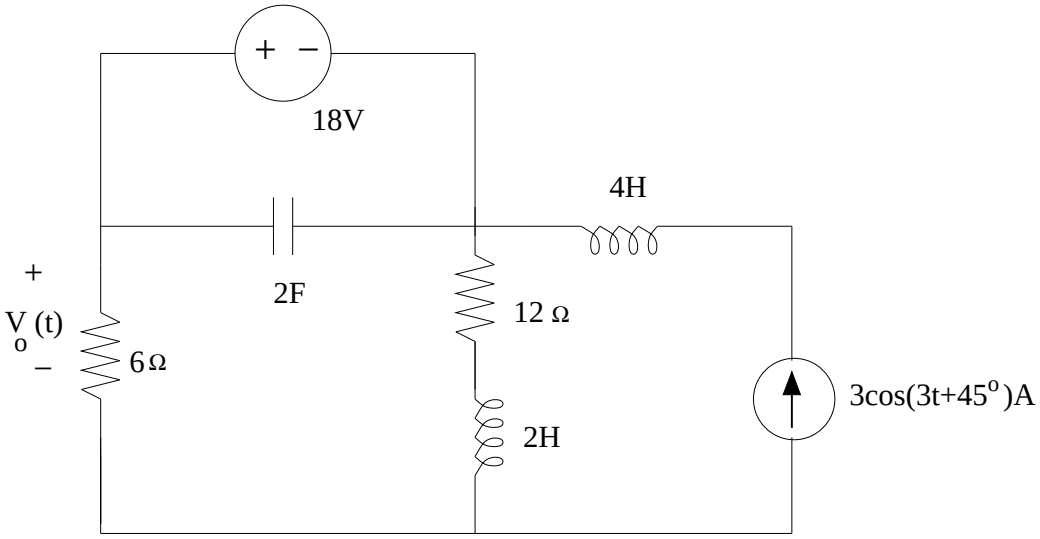
Problem 6: When a linear time-invariant network (network A) is terminated with a 1-Ω resistor as shown below left, a steady-state current $i_1(t) = 5\cos(1000t - 45^o)$ flows. When network A is terminated by a 1mF capacitor, as shown below right, a steady-state current $i_2(t) = 10\cos(1000t - 45^o)$ flows. Find the Thevenin equivalent of Network A.



Problem 7: Find $v_o(t)$ for the following circuit. Note there is a DC voltage source and an AC current source.



Problem 8: Find the voltage $V_o(t)$ in the following circuit.