

1. Find V_o in the circuit shown in Fig.1. [10%]

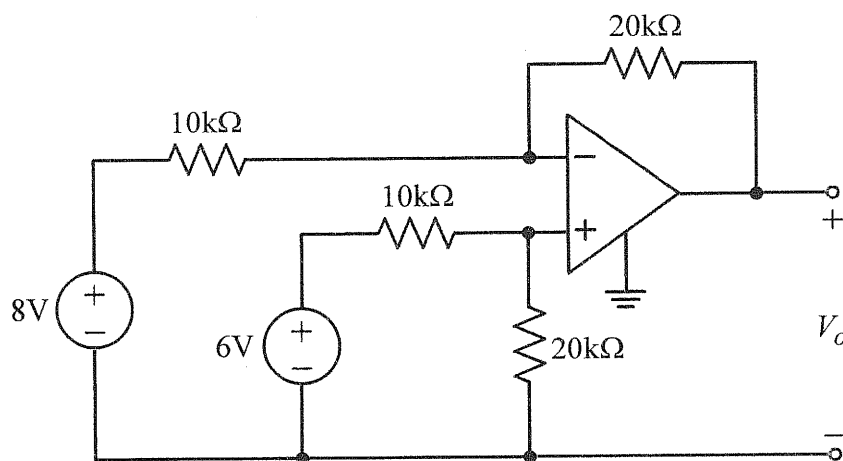


Fig. 1

2. Use superposition to calculate V_o in the network in Fig. 2. [15%]

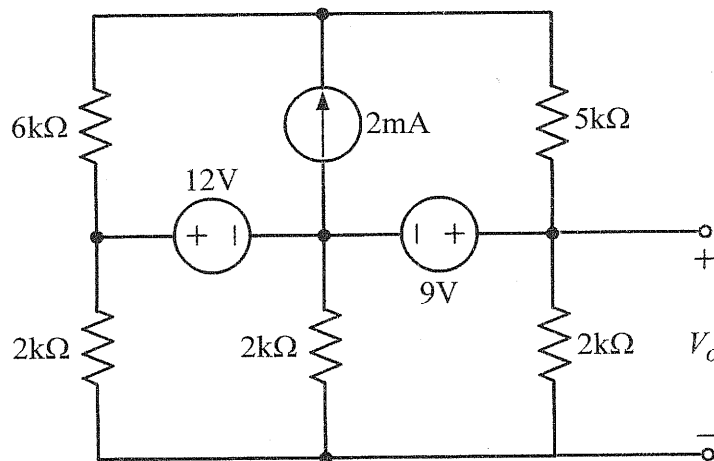


Fig. 2

3. Find V_o in the circuit in Fig. 3 using Thévenin's theorem. [20%]

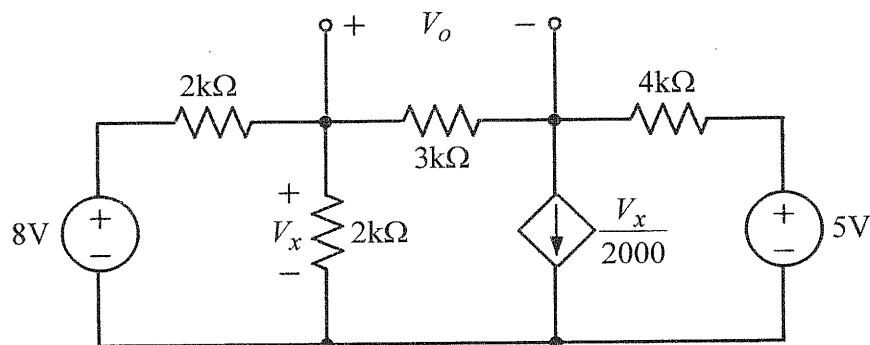


Fig. 3

4. The switch of the network depicted in Fig. 4 is opened at $t = 0$. Please determine the inductor current $i_L(t)$ for $t > 0$. [20%]

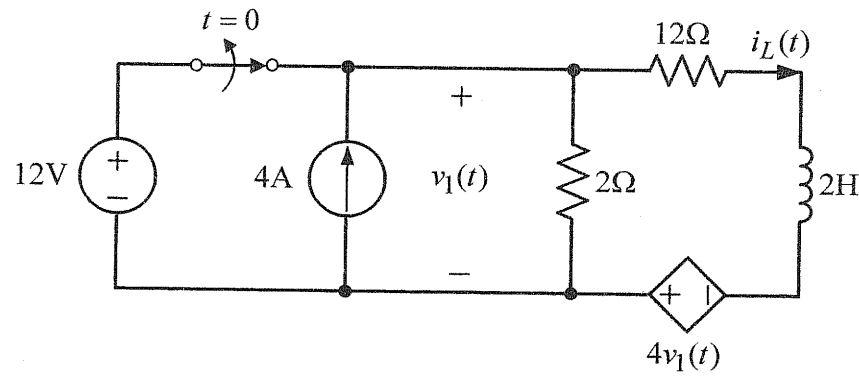


Fig. 4

5. A plant consumes 20kW at a power factor of 0.50 lagging from a 220-V rms 60Hz line. Determine the value of the capacitor that when placed in parallel with the load will improve the power factor to 0.95 lagging. [15%]
6. For the circuit shown in Fig. 5, calculate the output voltage V_o . [20%]

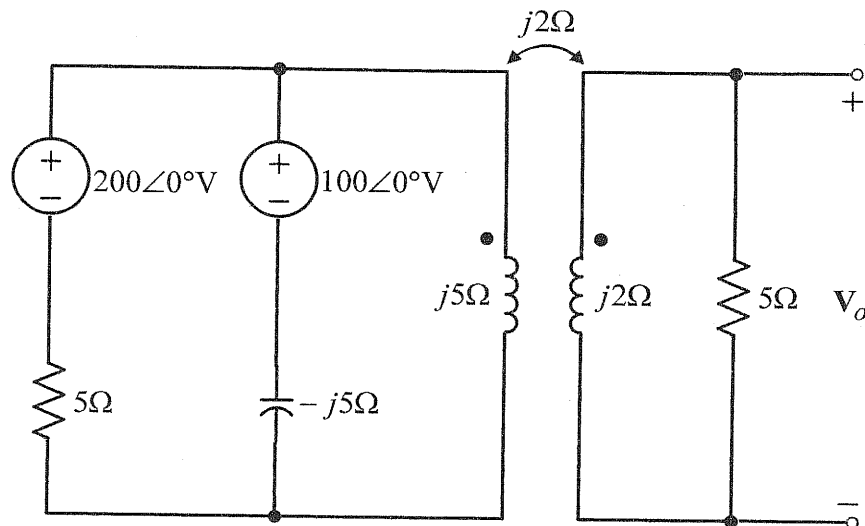


Fig. 5