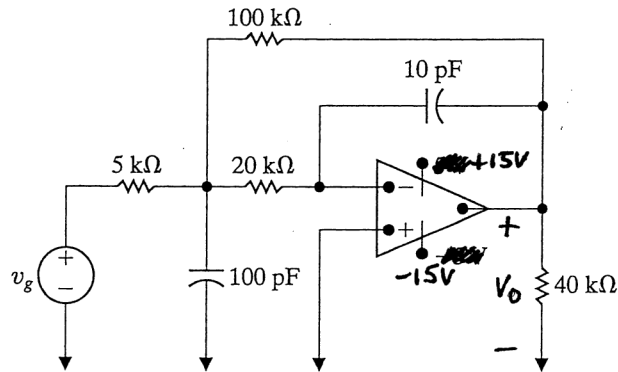


HOMEWORK 2

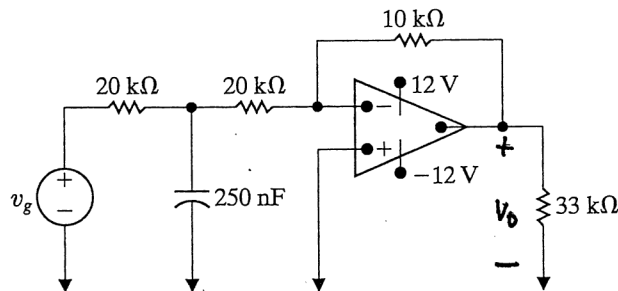
- 9.67** The op amp in the circuit seen in Fig. P9.67 is ideal. Find the steady-state expression for $v_o(t)$ when $v_g = 2 \cos 10^6 t$ V.

Figure P9.67



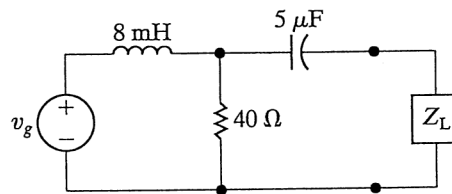
- 9.69** The sinusoidal voltage source in the circuit shown in Fig. P9.69 is generating the voltage $v_g = 4 \cos 200t$ V. If the op amp is ideal, what is the steady-state expression for $v_o(t)$?

Figure P9.69



- 10.44 a) Determine the load impedance for the circuit shown in Fig. P10.44 that will result in maximum average power being transferred to the load if $\omega = 5 \text{ krad/s}$.
- b) Determine the maximum average power delivered to the load from part (a) if $v_g = 80 \cos 5000t \text{ V}$.
- c) Repeat part (a) when Z_L consists of two components from Appendix H whose values yield a maximum average power closest to the value calculated in part (b).

Figure P10.44



10.46 The load impedance Z_L for the circuit shown in Fig. P10.46 is adjusted until maximum average power is delivered to Z_L .

- a) Find the maximum average power delivered to Z_L .
- b) What percentage of the total power developed in the circuit is delivered to Z_L ?

Figure P10.46

