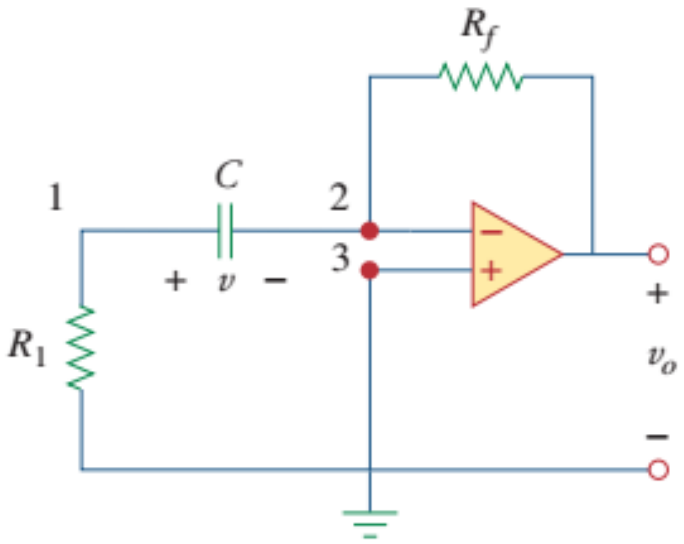
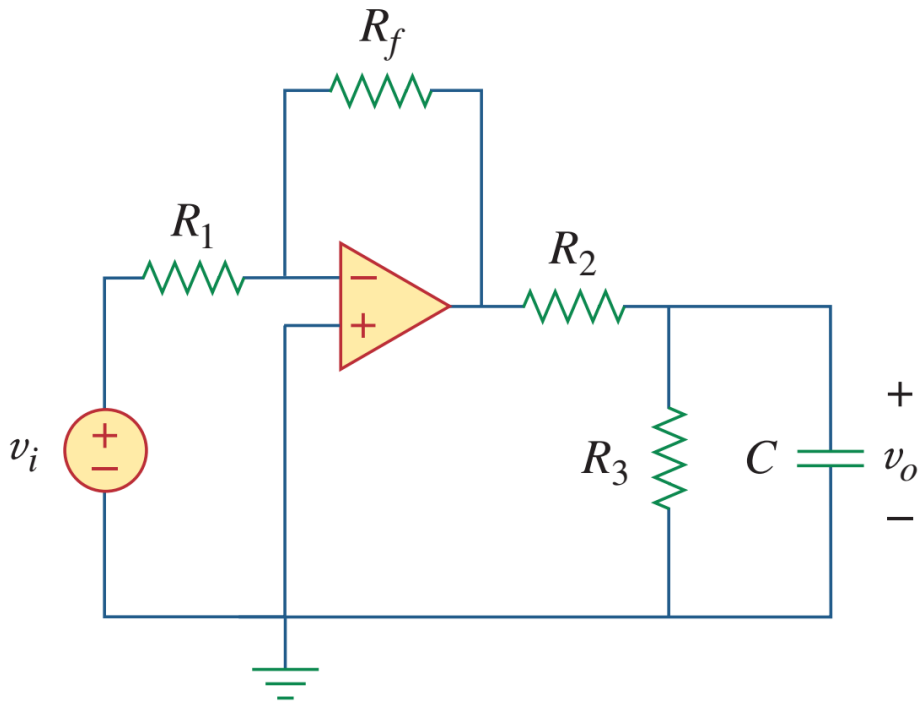
First order op-amp circuit

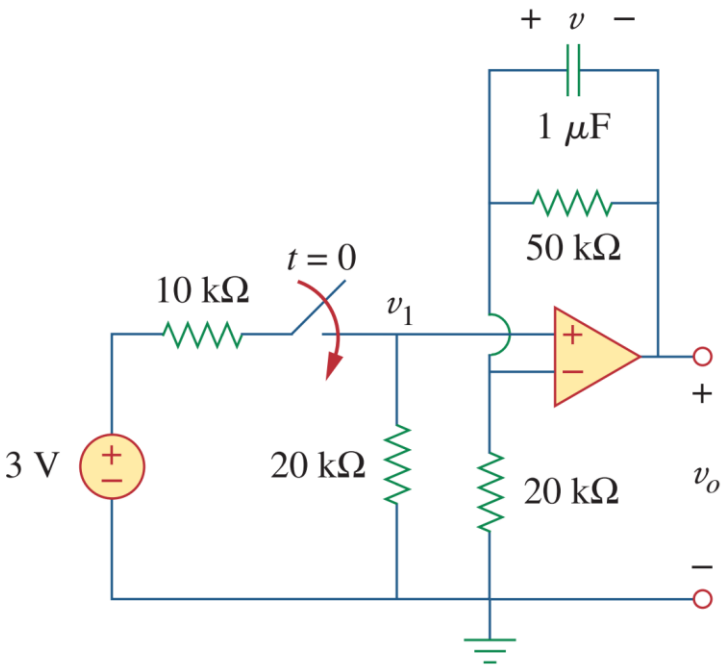
For the op amp circuit in Fig. 7.55(a), find v_o for $t > 0$, given that $v(0) = 3$ V. Let $R_f = 80\ \text{k}\Omega$, $R_1 = 20\ \text{k}\Omega$, and $C = 5\ \mu\text{F}$.

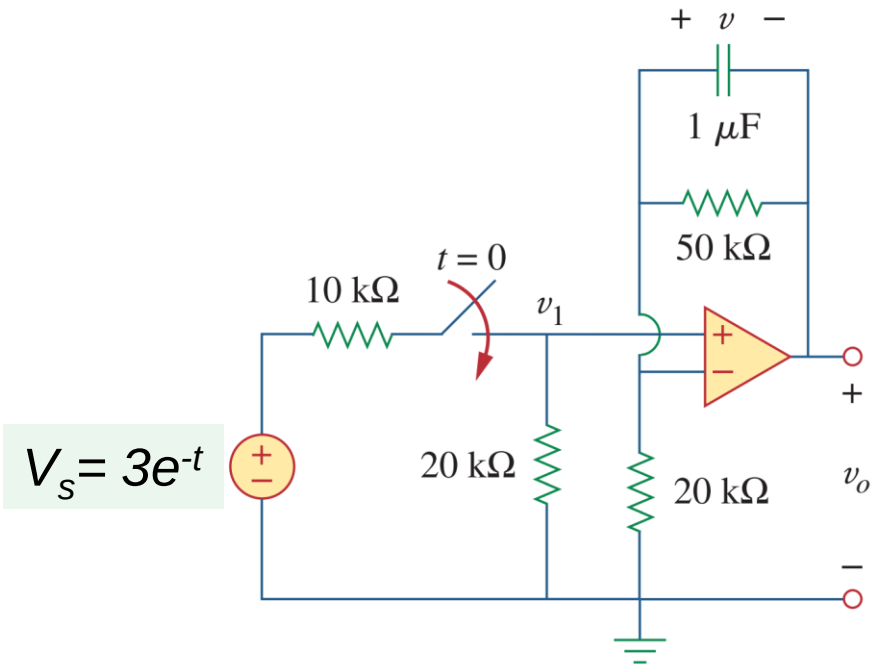


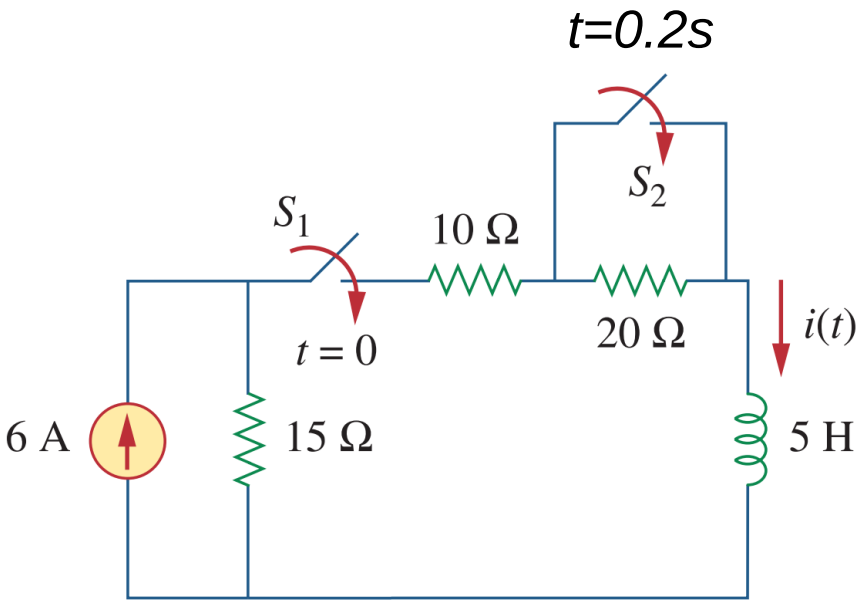
(a)

Find the step response $v_o(t)$ for $t > 0$ in the op amp circuit of Fig. 7.59. Let $v_i = 2u(t)$ V, $R_1 = 20\ \text{k}\Omega$, $R_f = 50\ \text{k}\Omega$, $R_2 = R_3 = 10\ \text{k}\Omega$, $C = 2\ \mu\text{F}$.




+ v −
1 μF
50 kΩ
t = 0
10 kΩ
v1
3 V
20 kΩ
20 kΩ
+
vo
−



$V_s = 3e^{-t}$

Practice