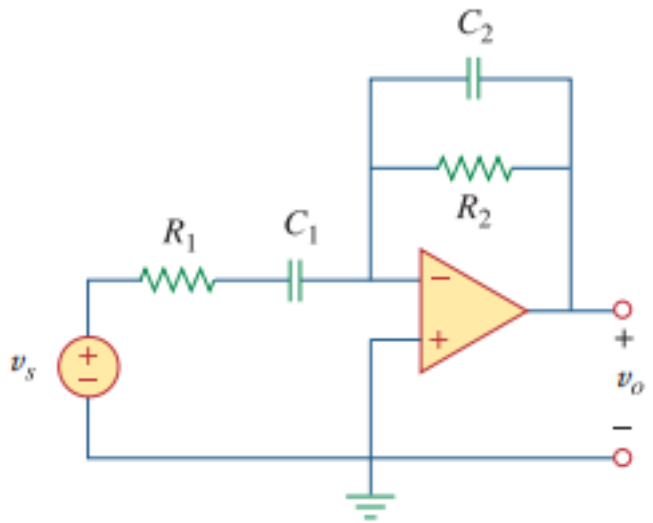
Final Exam – Review

Spring 2018

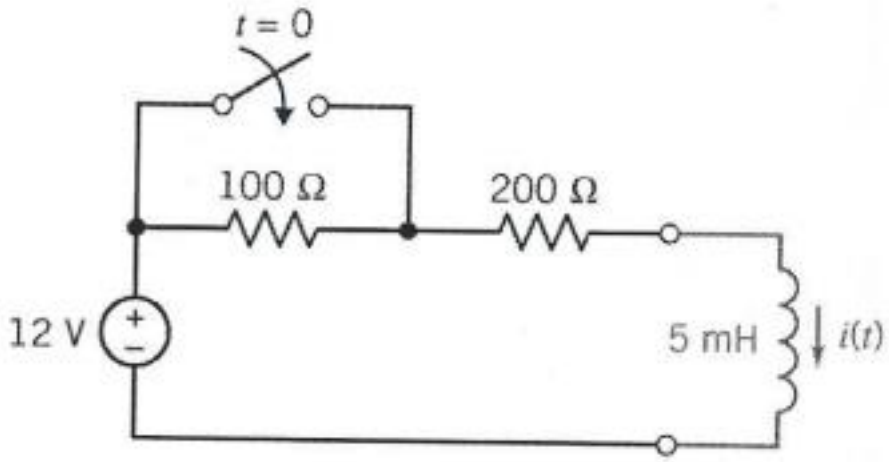
Problem 1

Compute the closed-loop gain and phase shift for the circuit in Fig. 10.33. Assume that $R_1 = R_2 = 10\ \text{k}\Omega$, $C_1 = 2\ \mu\text{F}$, $C_2 = 1\ \mu\text{F}$, and $\omega = 200$ rad/s.



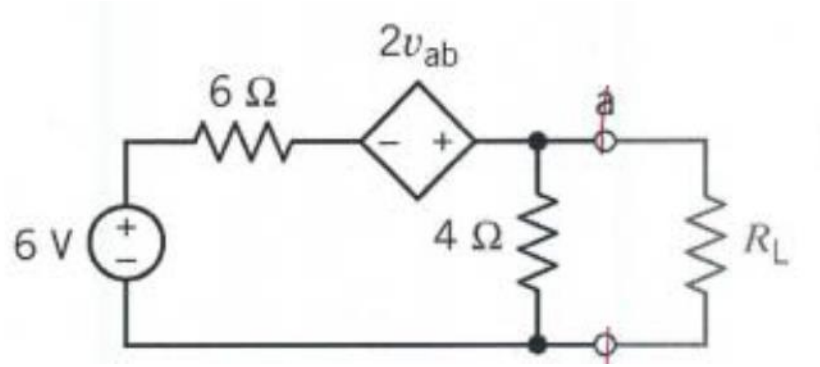
Problem 2

Calculate *i(t)*



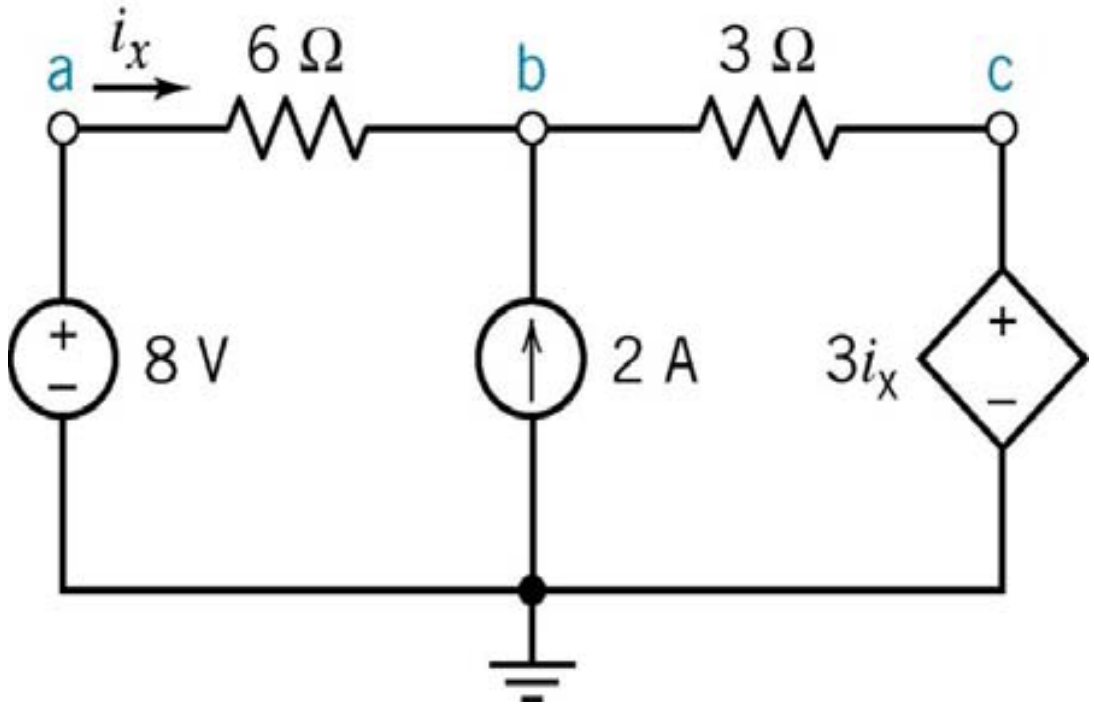
Problem 3

Find the Thévenin equivalent circuit



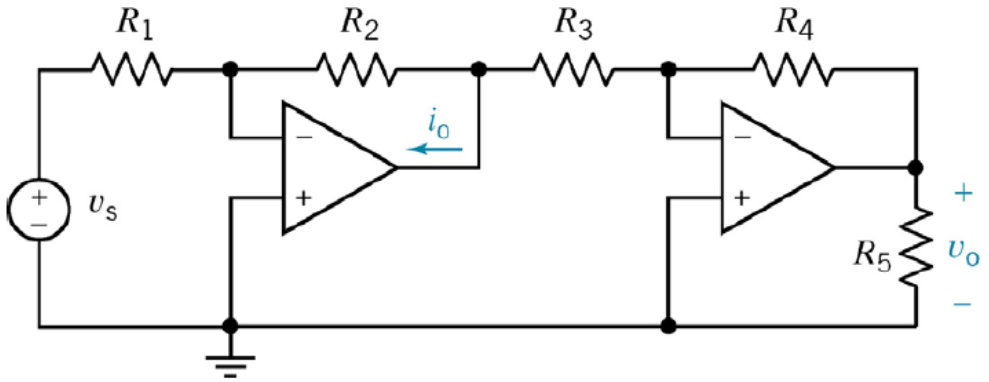
Problem 4

Calculate node voltages



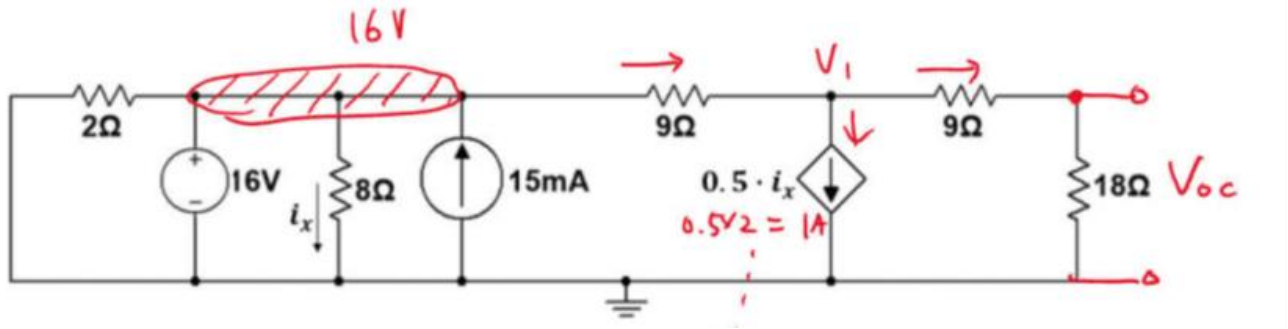
Problem 5

Find i_o and v_o if v_s = 1 V, R_1 = 10 Ω, R_2 = 50 Ω, R_3 = 20 Ω and R_4 = 80 Ω



Problem 6

Obtain the Norton equivalent circuit



Problem7

Determine the steady-state voltage *v(t)* and current *i(t)* for the circuit below