

Basic Circuit Theory (I) 電路學(一)  
 Dept. of ECE, National Taiwan University of Science and Technology  
**Homework 3**

1. Please find  $v_o(t)$  for  $t > 0$  in the circuit in Fig. 1.

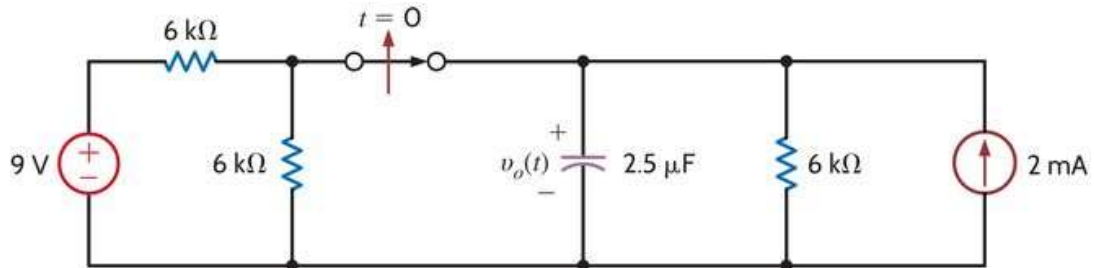


Fig. 1

2. Please find  $i(t)$  for  $t > 0$  in the circuit in Fig. 2.

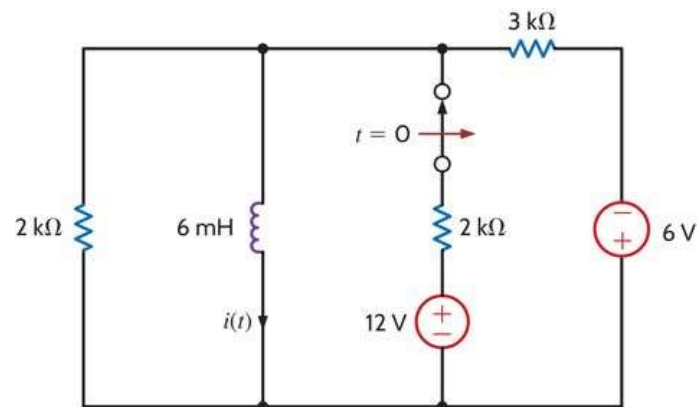


Fig. 2

3. The switch opens at  $t = 0$ . Please find  $v_o(t)$  for  $t > 0$ .

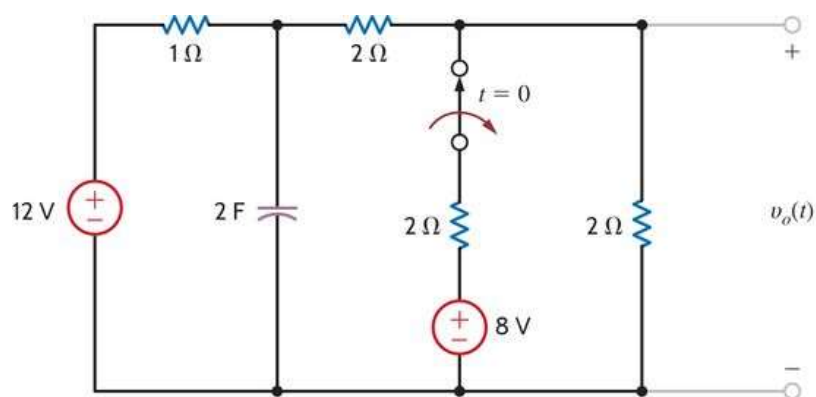


Fig. 3

4. The switch in the circuit in Fig. 4 moves from position 1 to position 2 at  $t = 0$ . Please find  $i_o(t)$  for  $t > 0$  and use this current to determine  $v_o(t)$  for  $t > 0$ .

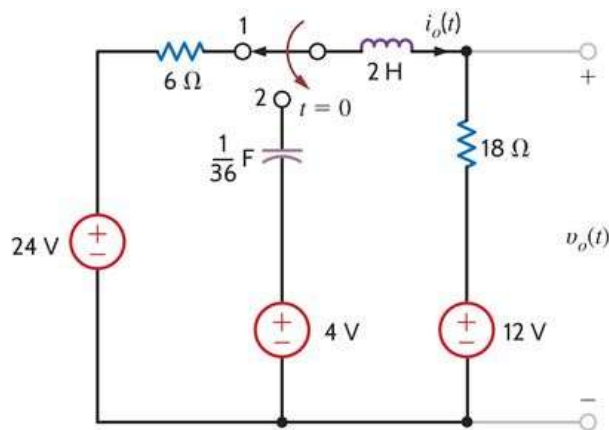


Fig. 4

5. At  $t = 0$  the switch 1 is closed and switch 2 is closed 4 seconds later. Please find  $i(t)$  for  $t > 0$  and calculate  $i$  for  $t = 2$  seconds and  $t = 5$  seconds.

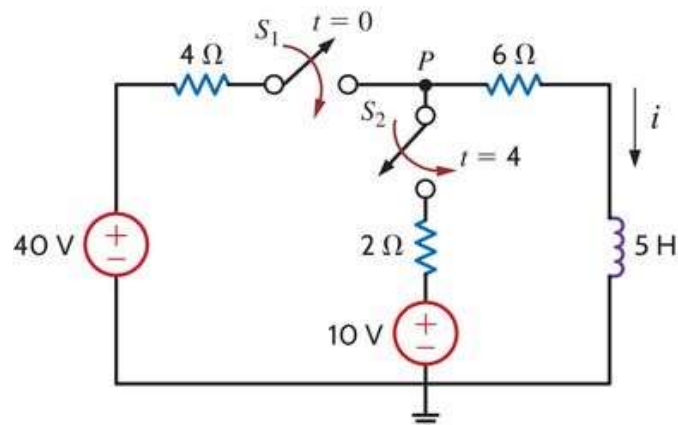


Fig. 5

6. The switch in the circuit in Fig. 6 has been closed for a long time and is opened at  $t = 0$ . Please find  $i(t)$  for  $t > 0$ .

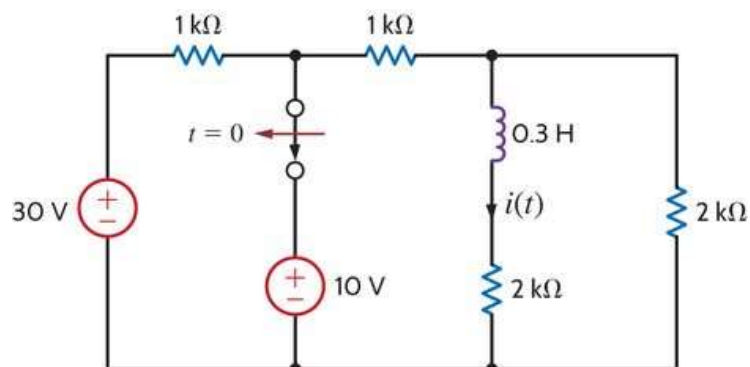


Fig. 6

7. Please find  $i_1(t)$  and  $i_2(t)$  for  $t > 0$  in the circuit shown in Fig. 7.

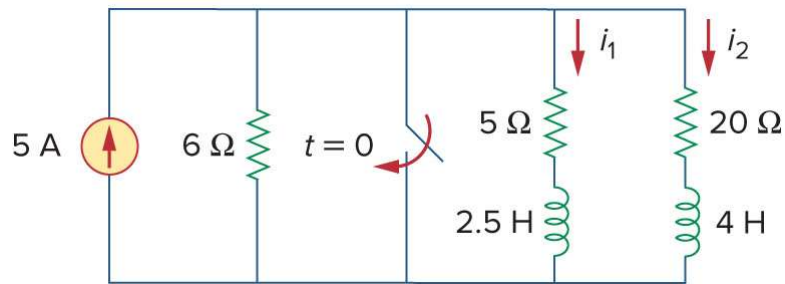


Fig. 7

8. Please find  $i(t)$  for  $t > 0$  in the circuit shown in Fig. 8.

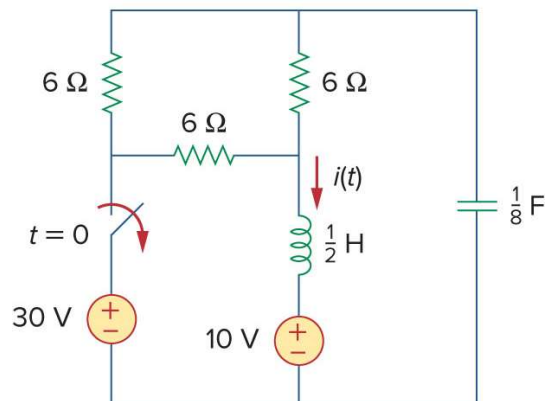


Fig. 8

9. In the circuit of Fig. 9, the switch has been in position 1 for a long time but moved to position 2 at  $t = 0$ . Please find  $v(t)$  for  $t > 0$ .

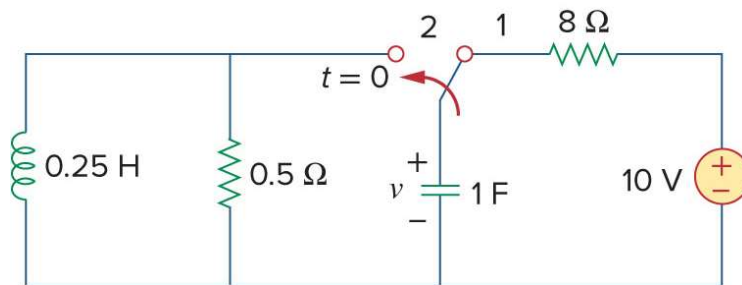


Fig. 9

10. Please find  $v_o(t)$  for  $t > 0$  in the circuit in Fig. 10.

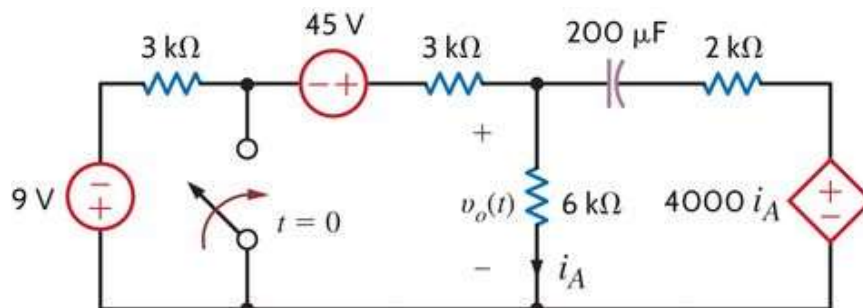


Fig. 10