

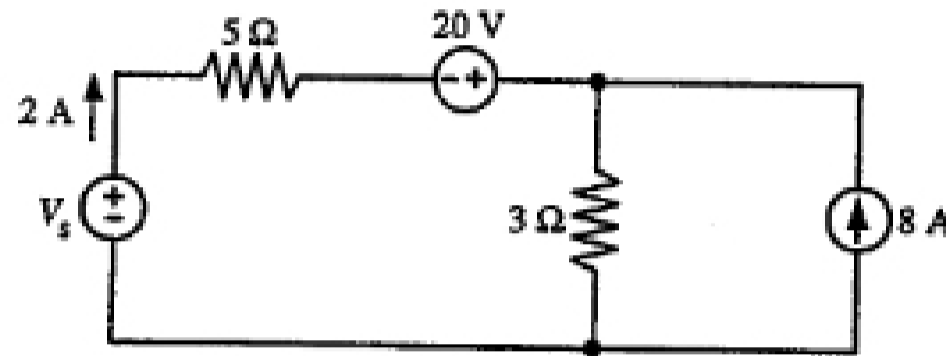
ECE 201
Review Questions- Final

Problem 1. For the circuit shown below, V_s is:

- (1) 60 V
- (4) -46 V
- (7) 100 V

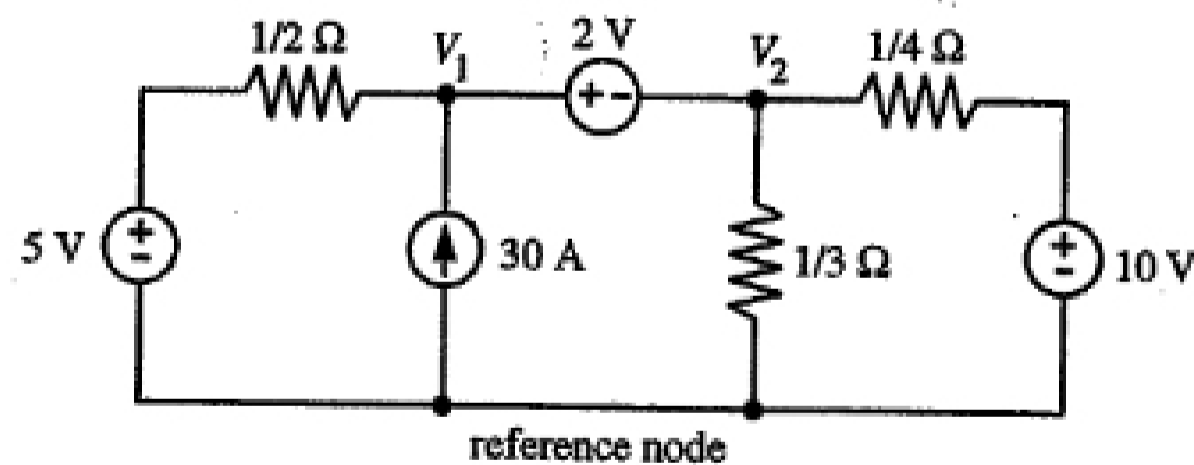
- (2) 40 V
- (5) -20 V

- (3) 20 V
- (6) -40 V



Problem 2. The circuit below contains a floating voltage source. It is convenient to incorporate the supernode concept in setting up the nodal equation. Pick the correct nodal equation involving the supernode.

- (1) $2V_1 + 7V_2 = 80$
- (2) $2V_1 + 7V_2 = 50$
- (3) $3V_1 - V_2 = 40$
- (4) $3V_1 + V_2 = 40$
- (5) $3V_1 + V_2 = 10$
- (6) $7V_1 - 2V_2 = 70$
- (7) $7V_1 - 2V_2 = 40$



Problem 3. Consider the circuit below with voltage sources V_{s1} and V_{s2} and mesh currents I_1 and I_2 . Find the correct mesh equations for the circuit.

$$(1) \quad \begin{cases} 6I_1 - 4I_2 = V_{s1} \\ 4I_1 - 7I_2 = V_{s2} \end{cases}$$

$$(2) \quad \begin{cases} 6I_1 - 3I_2 = V_{s1} \\ -2I_1 + 7I_2 = V_{s2} \end{cases}$$

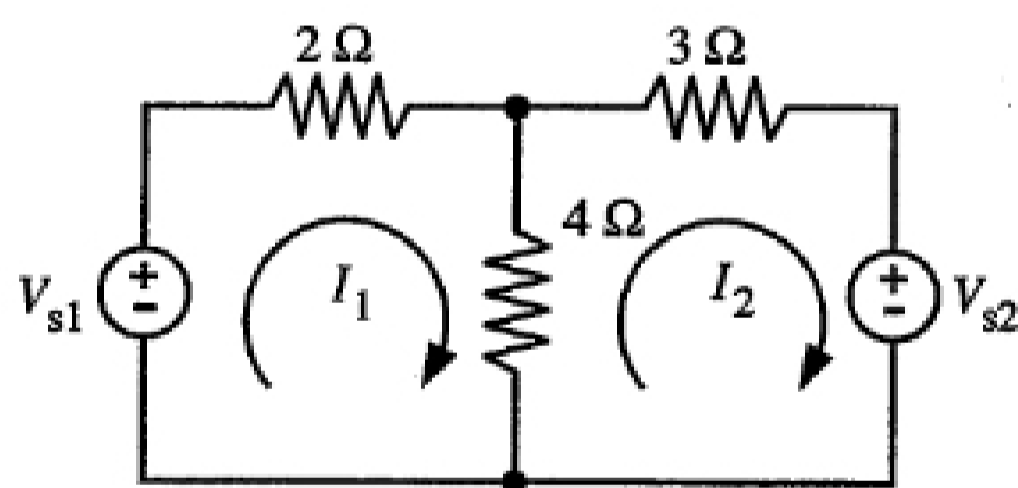
$$(3) \quad \begin{cases} 6I_1 + 4I_2 = V_{s1} \\ 4I_1 + 7I_2 = V_{s2} \end{cases}$$

$$(4) \quad \begin{cases} 6I_1 - 3I_2 = V_{s1} \\ 2I_1 + 7I_2 = V_{s2} \end{cases}$$

$$(5) \quad \begin{cases} 9I_1 - 4I_2 = V_{s1} \\ -4I_1 + 9I_2 = V_{s2} \end{cases}$$

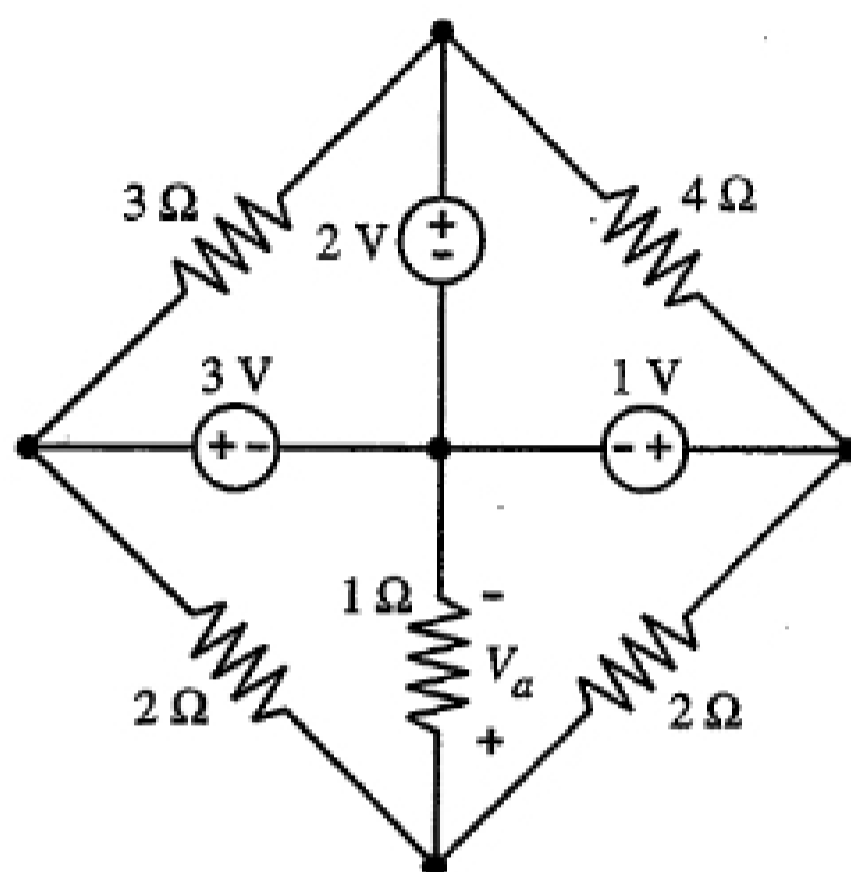
$$(6) \quad \begin{cases} 9I_1 + 4I_2 = -V_{s1} \\ 4I_1 + 9I_2 = V_{s2} \end{cases}$$

$$(7) \quad \begin{cases} 6I_1 - 4I_2 = V_{s1} \\ 4I_1 - 7I_2 = -V_{s2} \end{cases}$$



Problem 4. Compute V_a for the circuit drawn below. Answers (in Volts):

- (1) 1 (2) 2 (3) 3 (4) 0
 (5) -3 (6) -2 (7) -1



Problem 5. In the circuit below, the current source is given by

$$i_s(t) = 2 + 5u(t) \text{ A.}$$

Find $i_C(0^+)$ in Amps.

- (1) 1 (2) 2 (3) 3
 (4) 4 (5) 5 (6) 6
 (7) 7

