

**SKEE 1023 CIRCUIT THEORY**  
**SECTION 13**  
**TUTORIAL 4: Circuit Theorems**

1. Problem 4.3

- (b) In the circuit in Fig. 1, calculate  $v_o$  and  $I_o$  when  $v_s = 1$  V.  
(c) Find  $v_o$  and  $i_o$  when  $v_s = 10$  V.  
(d) What are  $v_o$  and  $I_o$  when each of the 1- $\Omega$  resistors is replaced by a 10- $\Omega$  resistor and  $v_s = 10$  V?

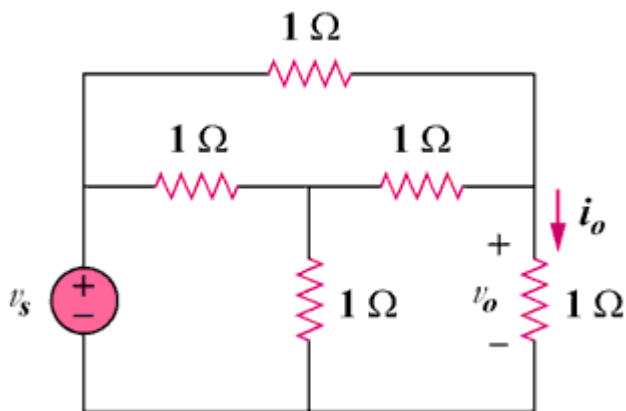


Figure 1

2. Problem 4.12

Determine  $v_o$  in the circuit in Fig. 2 using the superposition principle.

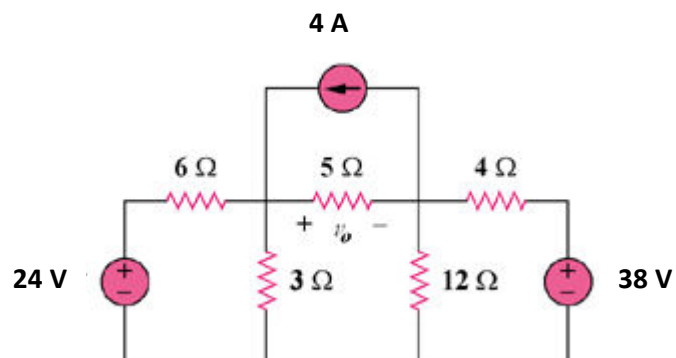


Figure 2

3. Problem 4.18

Use superposition to find  $V_o$  in the circuit of Fig. 3

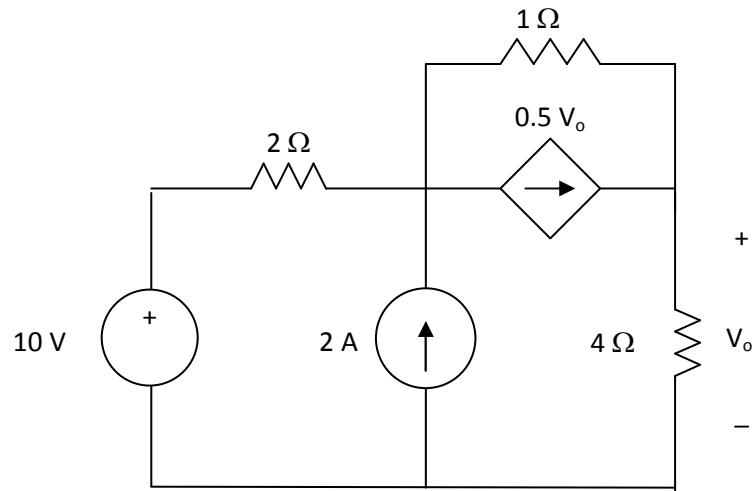


Figure 3

4. Problem 4.25

Obtain  $v_o$  in the circuit of Fig. 4 using source transformation.

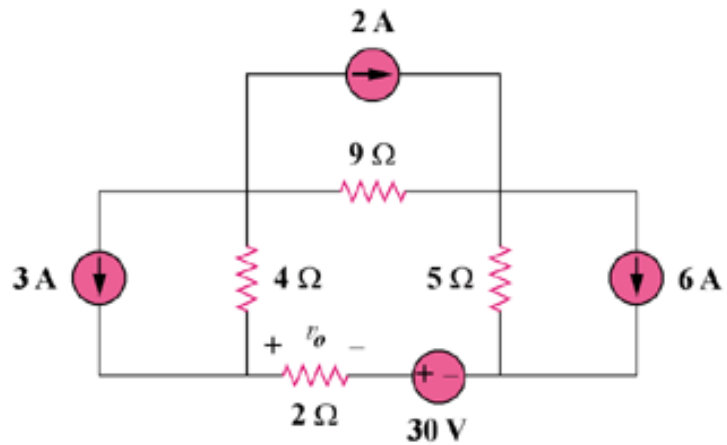


Figure 4

5. Problem 4.29

Use source transformation to find  $v_o$  in the circuit of Fig. 5.

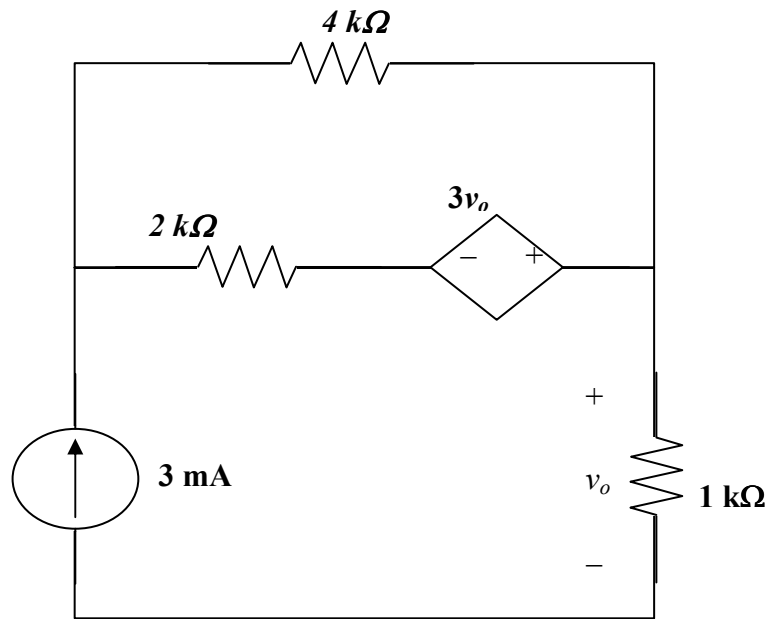


Figure 5

6. Problem 4.14 (Assignment group D)

Apply the superposition principle to find  $v_o$  in the circuit of Fig. 6.

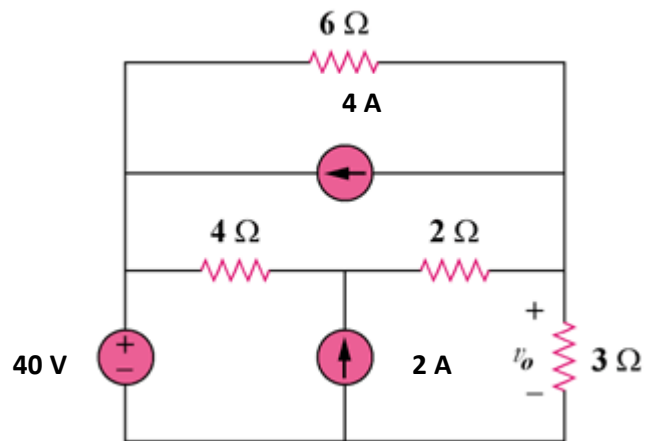


Figure 6