

SKEE 1023 CIRCUIT THEORY

SECTION 13

TUTORIAL 1: BASIC LAWS

1. Problem 2.23

In the circuit shown in Figure 2.87, determine v_x and the power absorbed by the $12\text{-}\Omega$ resistor.

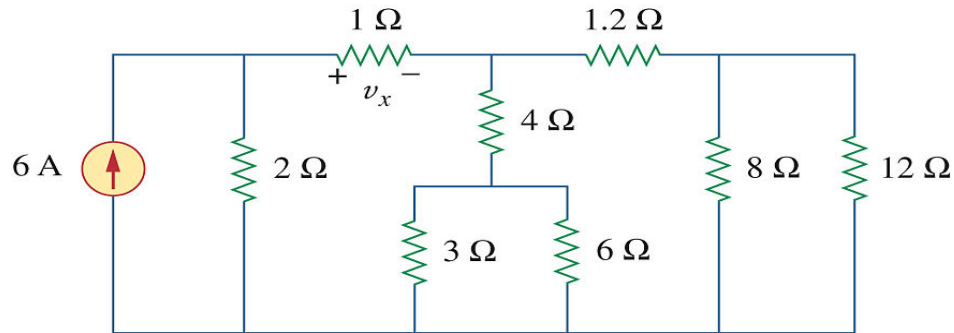


Figure 2.87

2. Problem 2.24

For the circuit in Figure 2.86, find V_o / V_s in terms of α , R_1 , R_2 , R_3 , and R_4 . If $R_1 = R_2 = R_3 = R_4$, what value of α will produce $|V_o / V_s| = 10$?

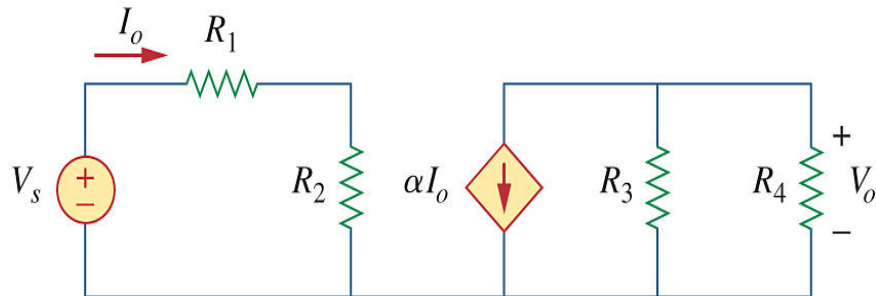


Figure 2.88

3. Problem 2.33

Obtain v and i in the circuit in Figure 2.97.

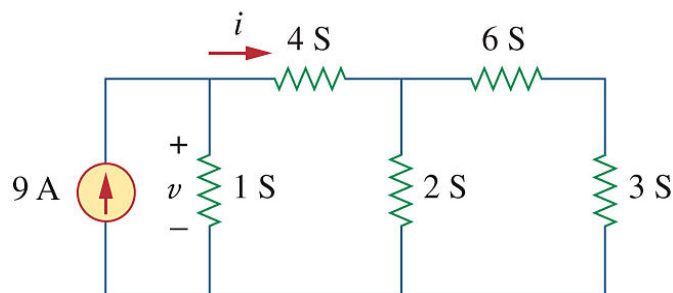


Figure 2.97

4. **Problem 2.41**

If $R_{eq} = 50\ \Omega$ in the circuit in Figure 2.105, find R .

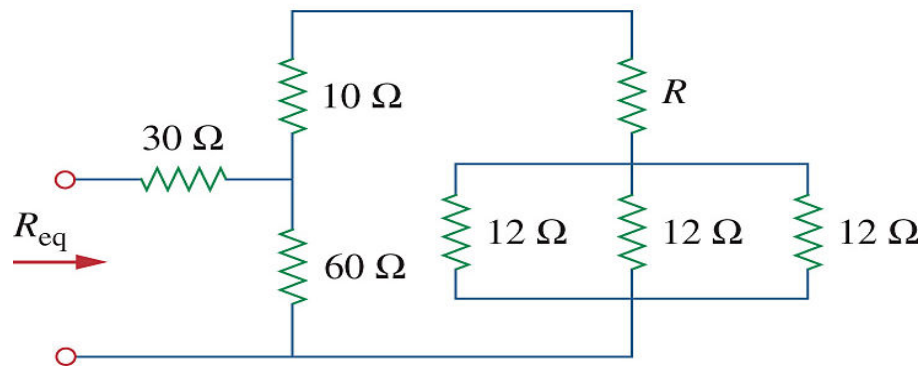
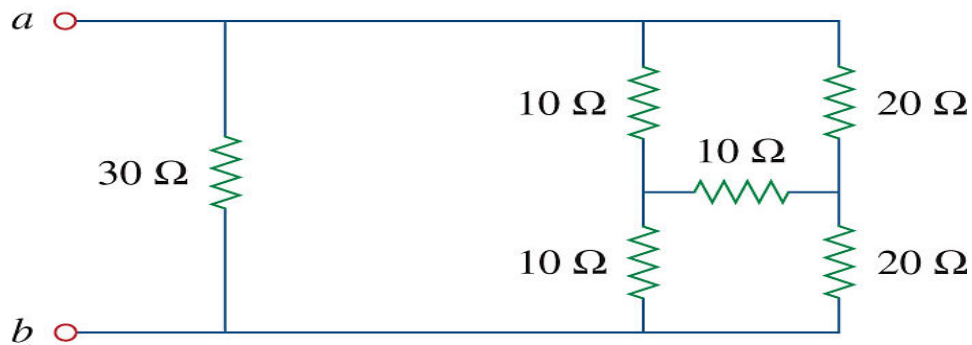


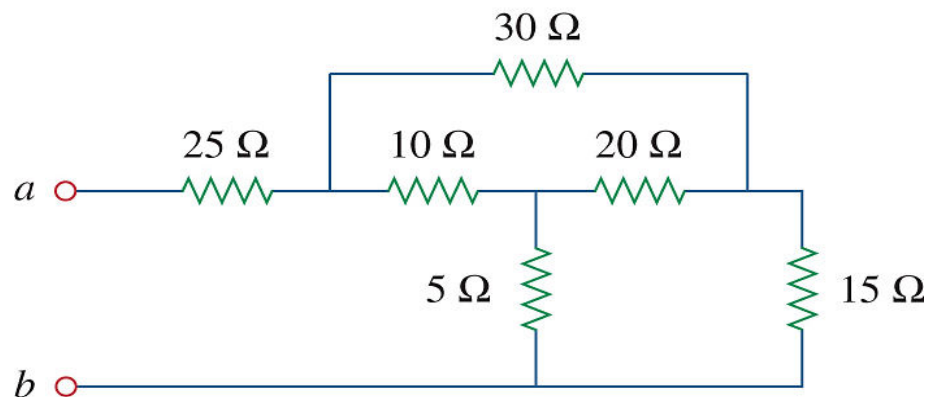
Figure 2.105

4. **Problem 2.51**

Obtain the equivalent resistance at the terminals a - b for each of the circuits in Figure 2.115



(a)



(b)

Figure 2.115

5. **Problem 2.56**

Determine V in the circuit of Figure 2.120.

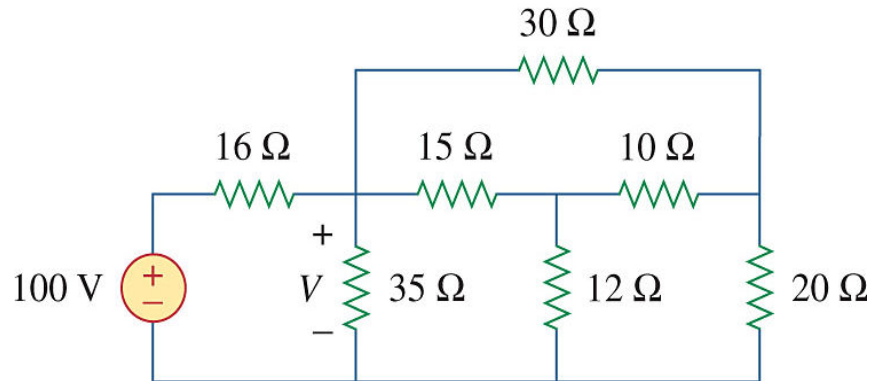


Figure 2.120

6. **Problem 2.67**

- Obtain the voltage v_o in the circuit of Figure 2.127.
- Determine the voltage v'_o measured when a voltmeter with 6-k Ω internal resistance is connected as shown in Fig. 2.127.
- The finite resistance of the meter introduces an error into the measurement. Calculate the percent error as

$$\left| \frac{v_o - v'_o}{v_o} \right| \times 100\%.$$

- Find the percent error if the internal resistance were 36 k Ω .

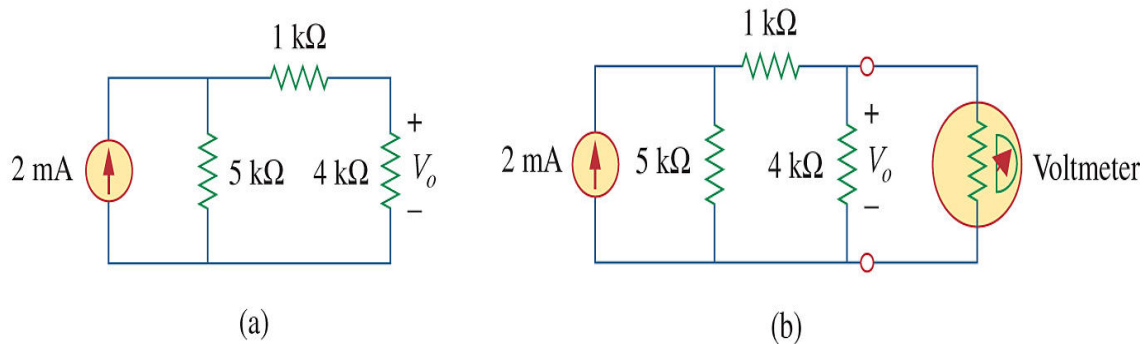


Figure 2.127