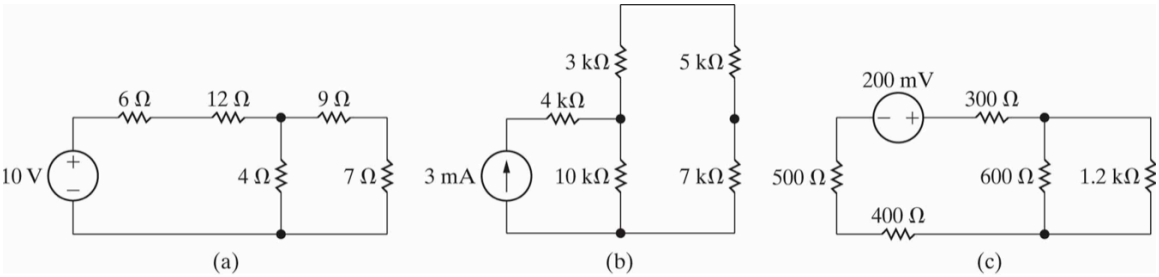
Problem # 1

For each of the circuits shown,

a) Identify the resistors connected in series;

b) Simplify the circuit by replacing the series-connected resistors with equivalent resistors.

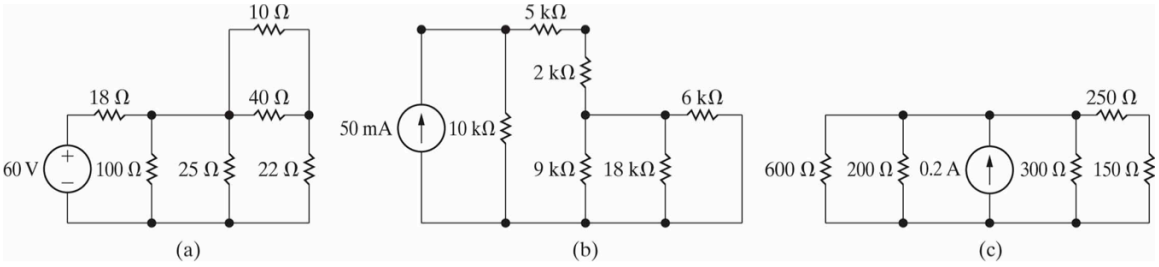


Problem #2

For each of the circuits shown in the Figure,

a) Identify the resistors connected in parallel;

b) Simplify the circuit by replacing the parallel- connected resistors with equivalent resistors.



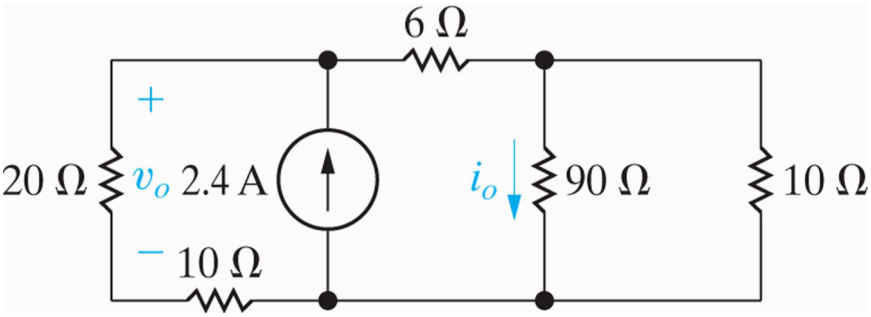
Problem #3

For the circuit in the Figure calculate

a) v_o and i_o;

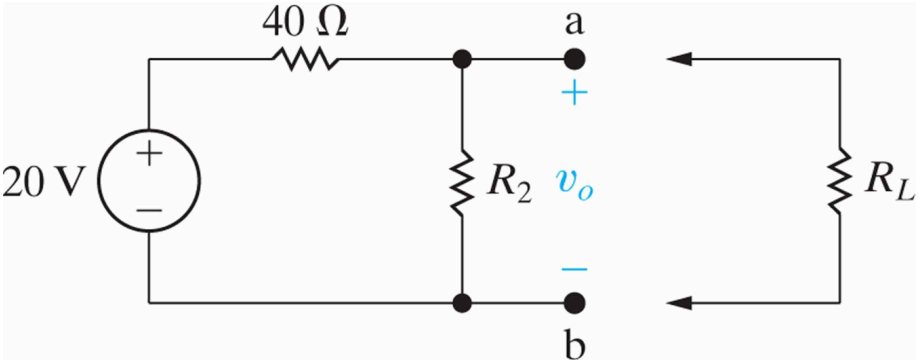
b) The power dissipated in the 6**Ω** resistor;

c) The power developed by the current source.



Problem #4

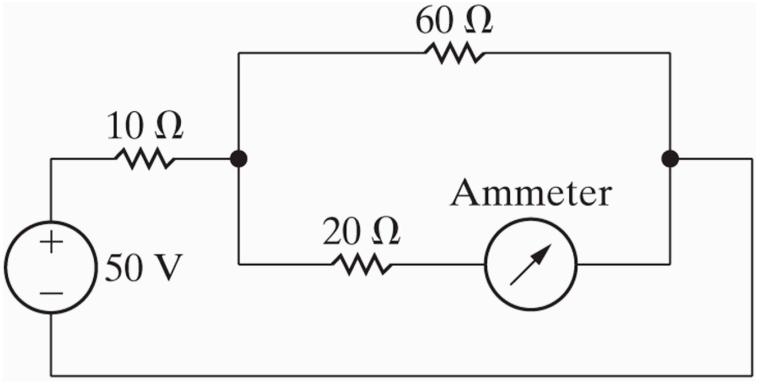
In the voltage-divider circuit shown in Figure, the no-load value of v_o is 4 V. When the load resistance R_L is attached across the terminals a and b, v_o drops to 3V. Find R_L.



Problem #5

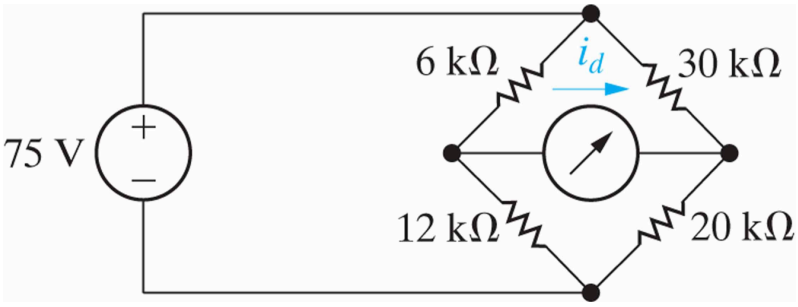
The ammeter in the circuit in Figure has a resistance of 0.1Ω. Find the percentage of error in the ammeter reading if

$$\% \text{ error} = \left(\frac{\text{measured value}}{\text{true value}} - 1 \right) \times 100$$



Problem #6

Find the detector current i_d in the unbalanced bridge in Figure if the voltage drop across the detector is negligible.



Problem #7

Use a Y-to-Δ transformation to find (a) i_o; (b) i_1; (c) i_2; and (d) the power delivered by the ideal current source in the circuit in Figure.