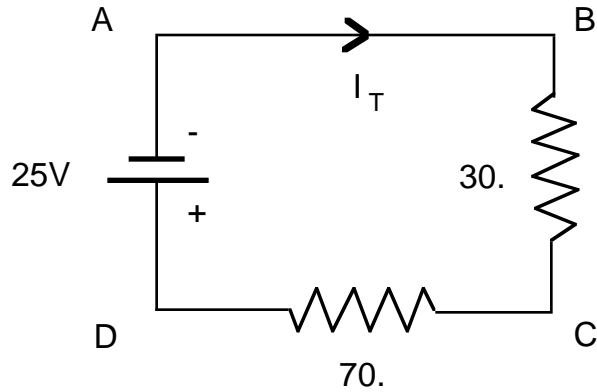
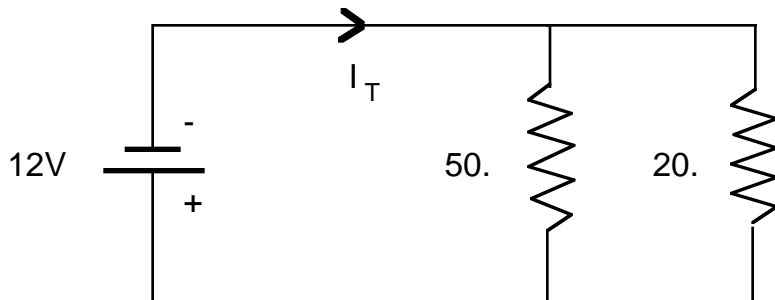


Circuits 3 : W.S.-40

1) A series electrical circuit with two resistors is shown below.

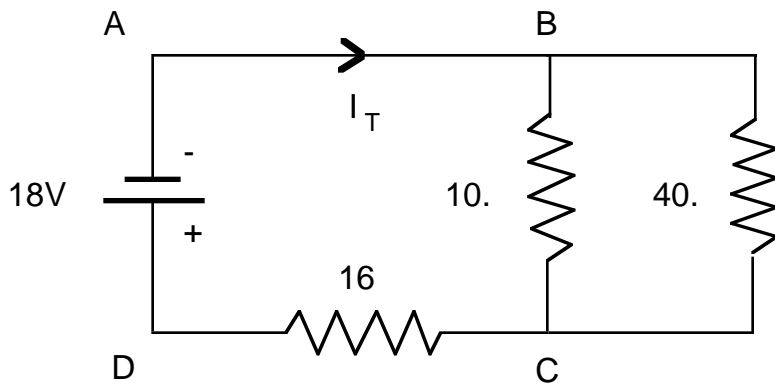


- Find the total resistance (R_T).
 - Find I_T and find the current through each resistor.
 - Find the potential difference across each resistor.
 - If the potential at point A equals 0.0V. Find the potential at B, C, and D.
- 2) A parallel electric circuit with two resistors is shown below.

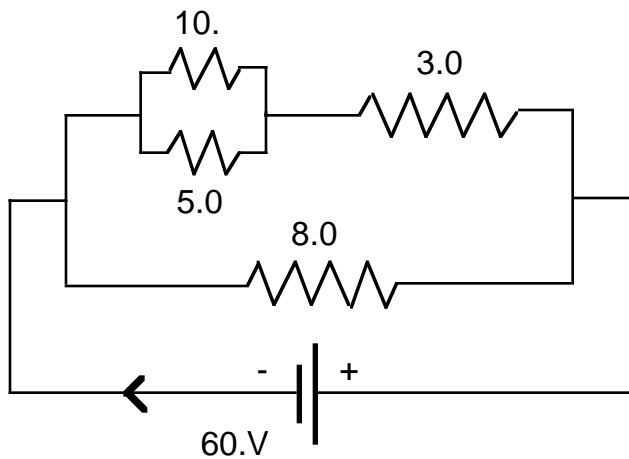


- Find the total resistance. Use $1/R_T = 1/R_1 + 1/R_2$.
- Find I_T . Use $V = I_T \times R_T$
- Find the potential difference across each resistor.
- Find the current through each resistor.

3) The following circuit is neither series or parallel. An electrical circuit with three resistors is shown below.



- Find R_T .
 - Find I_T
 - Find the voltage across each resistor. (hint; find V_{16} first)
 - If the potential at A is 0.0 V. Find the potential at B, C, and D.
 - Find the current through each resistor. (16Ω first)
- 4)



- Find R_T . and I_T .

b) Find the potential difference and current across each resistor.

Answers : 1)a) $100.\Omega$, b) $I_T = I_{30} = I_{70} = 0.25 \text{ A}$, c) $V_{30} = 7.5 \text{ V}$, $V_{70} = 18 \text{ V}$, d) 0.0 V , 7.5 V , 25 V , 2)a) 14Ω , b) 0.84 A , c) $V_{50} = V_{20} = 12 \text{ V}$, d) $I_{50} = 0.24 \text{ A}$, $I_{20} = 0.60 \text{ A}$, 3)a) 24Ω , b) 0.75 A , c) $V_{16} = 12 \text{ V}$, $V_{10} = V_{40} = 6 \text{ V}$, d) 0.0 V , 6.0 V , 18 V , e) $I_{16} = 0.75 \text{ A}$, $I_{10} = 0.60 \text{ A}$, $I_{40} = 0.15 \text{ A}$, 4)a) 3.5Ω , 17 A , b) $V_8 = 60. \text{ V}$, $I_8 = 7.5 \text{ A}$, $V_3 = 29 \text{ V}$, $I_3 = 9.5 \text{ A}$, $V_{10} = 32 \text{ V}$, $I_{10} = 3.2 \text{ A}$, $V_5 = 32 \text{ V}$, $I_5 = 6.3 \text{ A}$.