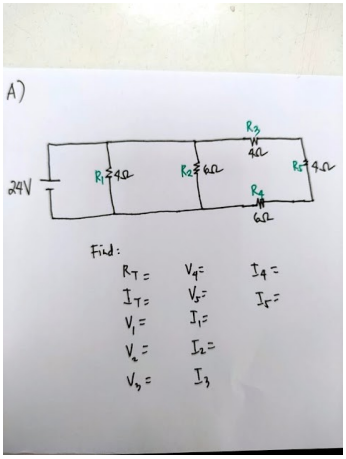
General Physics 2 | 3rd Quarter

WW4: Series-Parallel Circuits

February 9 2022



A. Given:

- $V_T = 24\,V$
- $R_1 = 4\,\Omega$
- $R_2 = 6\,\Omega$
- $R_3 = 4\,\Omega$
- $R_4 = 6\,\Omega$
- $R_5 = 4\,\Omega$

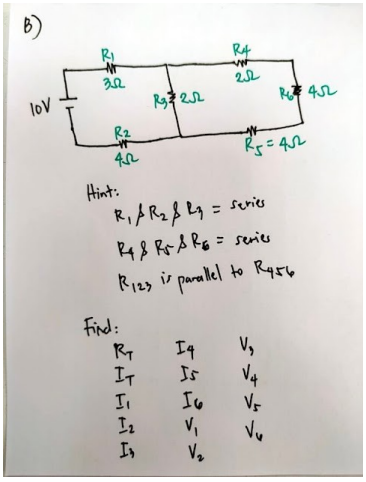
Find:

- R_T
- I_T
- $I_1, \cdots, I_5$
- $V_1, \cdots, V_5$

Answers:

- $R_T = \frac{84}{41}\,\Omega$
- $V_1, V_2 = 24\,V$
- $V_3 = \frac{48}{7}\,V$
- $V_4 = \frac{72}{7}\,V$
- $V_5 = \frac{48}{7}\,V$
- $I_T = \frac{82}{7}\,A$

- $I_1 = 6\,A$
- $I_2 = 4\,A$
- $I_3, I_4, I_5 = \frac{12}{7}\,A$



B. Given:

- $V_T = 10V$
- $R_1 = 3\,\Omega$
- $R_2 = 4\,\Omega$
- $R_3 = 2\,\Omega$
- $R_4 = 2\,\Omega$
- $R_5 = 4\,\Omega$
- $R_6 = 4\,\Omega$

Find:

- R_T
- I_T
- $I_1, \cdots, I_6$
- $V_1, \cdots, V_6$

Answers:

- $R_T = \frac{26}{8}\,\Omega$
- $V_1 = \frac{45}{13}V$
- $V_2 = \frac{60}{13}V$

- $V_3 = \frac{25}{13} V$
- $V_4 = \frac{5}{13} V$
- $V_5, V_6 = \frac{10}{13} V$
- $I_1, I_2 = \frac{15}{13} A$
- $I_3 = \frac{25}{26} A$
- $I_4, I_5, I_6 = \frac{5}{26} A$
- $I_T = \frac{15}{13} A$