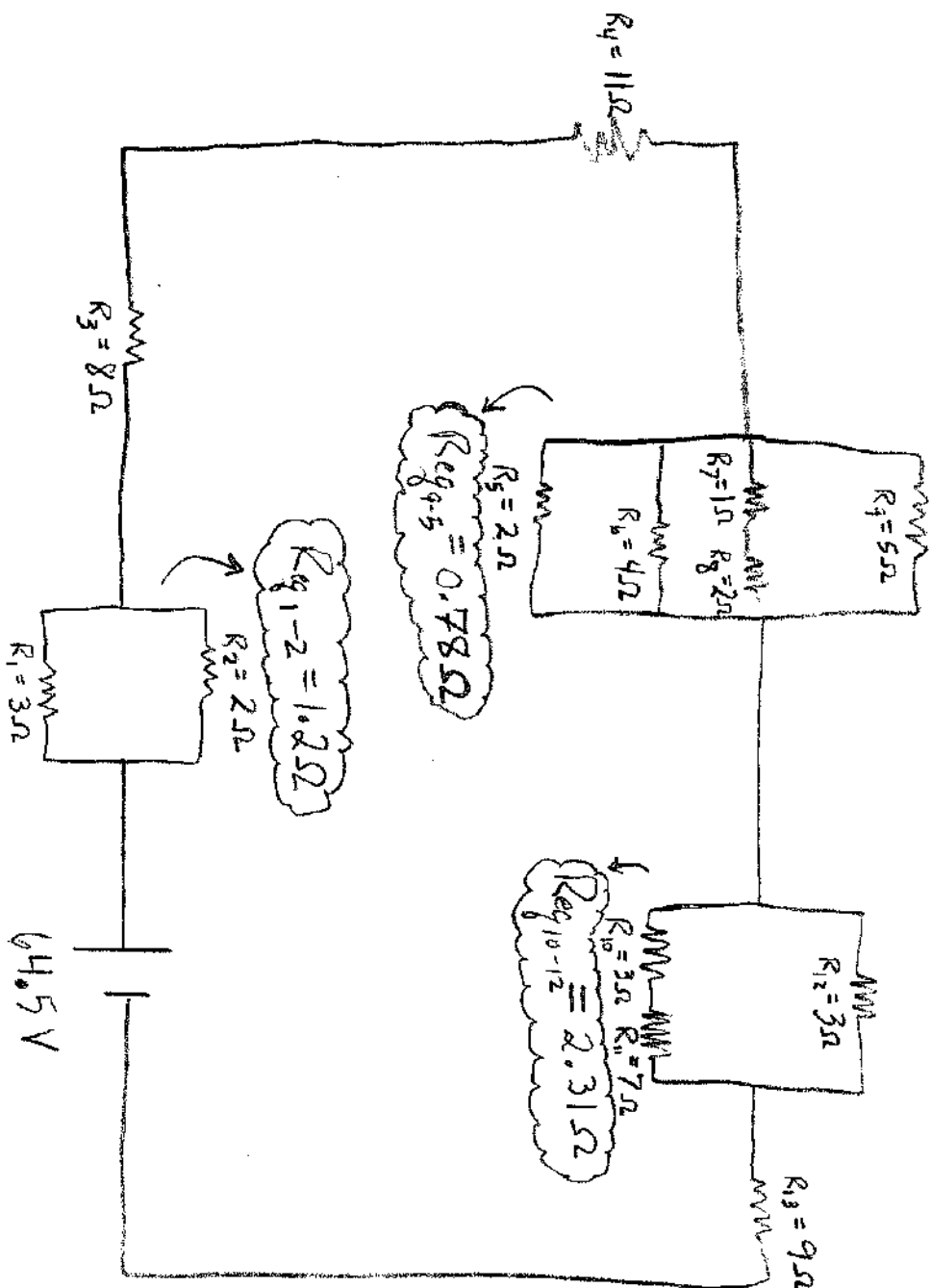


Answer Key - attached



Calculate: R_t , I_t , $V_1 \rightarrow V_{13}$, $I_1 \rightarrow I_{13}$

- Answer Key -

$$V = I \cdot R \quad I = \frac{V}{R}$$

$$R_T = 1.2\Omega + 8\Omega + 11\Omega + 0.78\Omega + 2.31\Omega + 9\Omega$$

$$R_T = 32.3\Omega$$

$$I_T = \frac{V_T}{R_T} = \frac{64.5V}{32.3\Omega} \approx 2A = I_T$$

$$V_1 = V_2 = I_T \cdot R_{eq} = (2A)(1.2\Omega) = 2.4V = V_1 = V_2$$

$$V_3 = I_T \cdot R_3 = (2A)(8\Omega) = 16V = V_3$$

$$V_4 = I_T \cdot R_4 = (2A)(11\Omega) = 22V = V_4$$

$$V_5 = V_6 = (*V_{7+8}) = V_9 = I_T \cdot R_{eq} = (2A)(0.78\Omega) = 1.56V$$

*see below

$$= V_5 = V_6 = V_9$$

$$V_{12} = (*V_{10+11}) = I_T \cdot R_{eq} = (2A)(2.31\Omega) = 4.62V = V_{12}$$

$$V_{13} = I_T \cdot R_{13} = (2A)(9\Omega) = 18V = V_{13}$$

$$I_1 = \frac{V_1}{R_1} = \frac{2.4V}{3\Omega} = 0.8A = I_1 \quad I_2 = \frac{V_2}{R_2} = \frac{2.4V}{2\Omega} = 1.2A = I_2$$

$$I_3 = I_T = 2A$$

$$I_4 = I_T = 2A$$

$$I_5 = \frac{V_5}{R_5} = \frac{1.56V}{2\Omega} = 0.78A = I_5 \quad I_6 = \frac{V_6}{R_6} = \frac{1.56V}{4\Omega} = 0.39A = I_6$$

$$I_7 = I_8 = I_{7+8} = \frac{V_{7+8}}{R_{7+8}} = \frac{1.56V}{3\Omega} = 0.52A = I_7 = I_8$$

$$I_9 = \frac{V_9}{R_9} = \frac{1.56V}{5\Omega} = 0.31A = I_9$$

$$I_{10} = I_{11} = I_{10+11} = \frac{V_{10+11}}{R_{10+11}} = \frac{4.62V}{10\Omega} = 0.46A = I_{10} = I_{11}$$

$$I_{12} = \frac{V_{12}}{R_{12}} = \frac{4.62V}{3\Omega} = 1.54A = I_{12} \quad I_{13} = I_T = 2A$$

$$* V_7 = I_7 \cdot R_7 = (0.52A)(1\Omega) = 0.52V = V_7 \quad V_8 = I_8 \cdot R_8 = (0.52A)(2\Omega) = 1.04V = V_8$$

$$* V_{10} = I_{10} \cdot R_{10} = (0.46A)(3\Omega) = 1.38V = V_{10} \quad V_{11} = I_{11} \cdot R_{11} = (0.46A)(7\Omega) = 3.22V = V_{11}$$