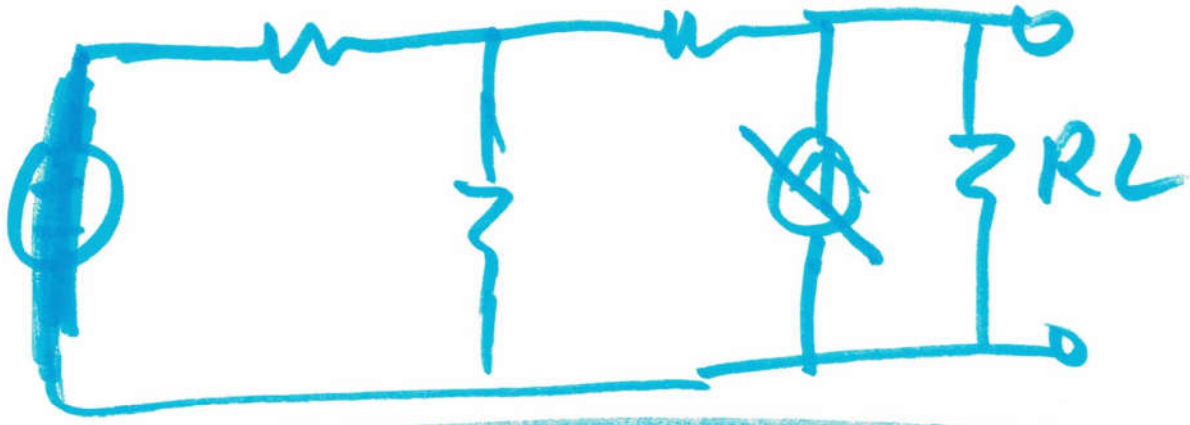
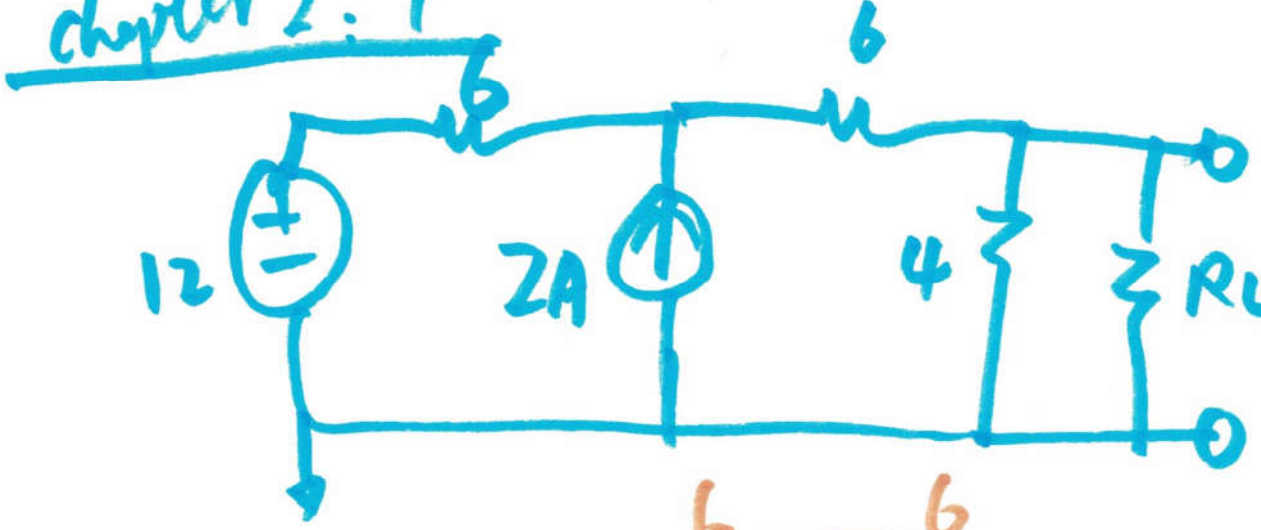
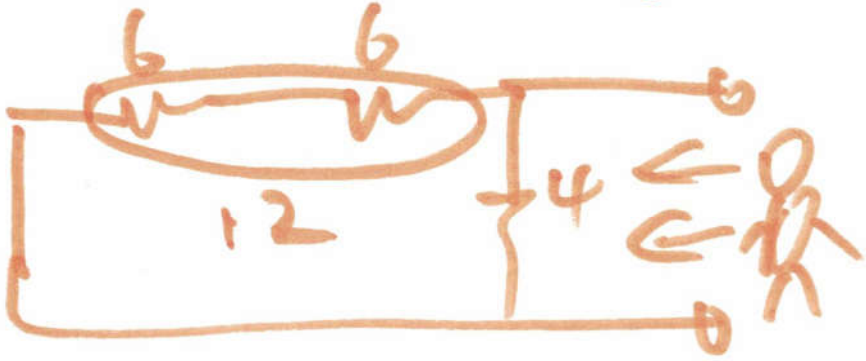


chapter 2.7

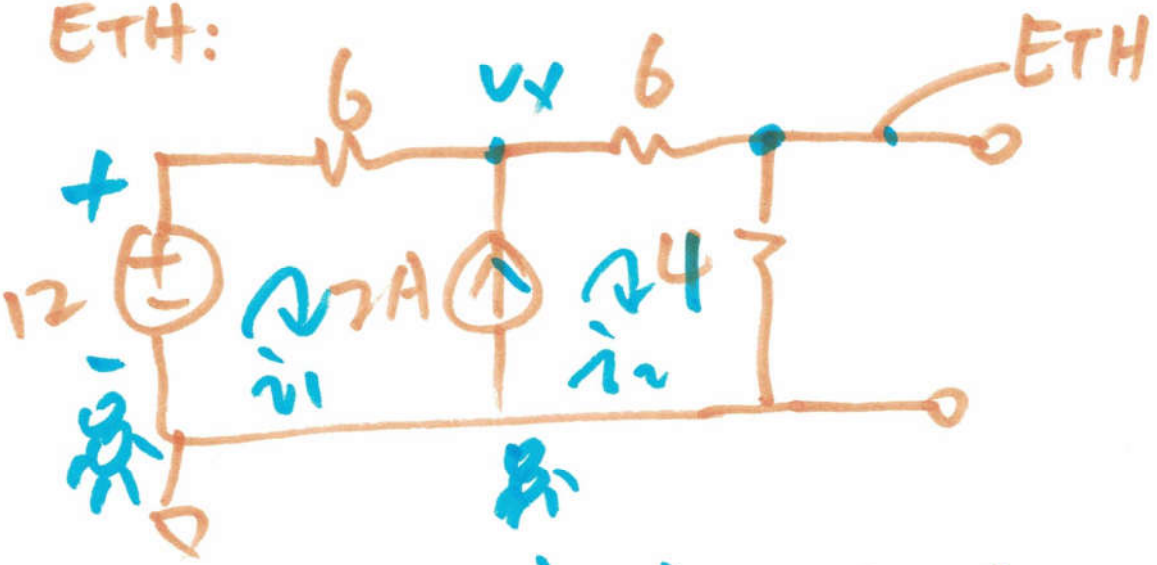


RTH:



RTH = 4//12

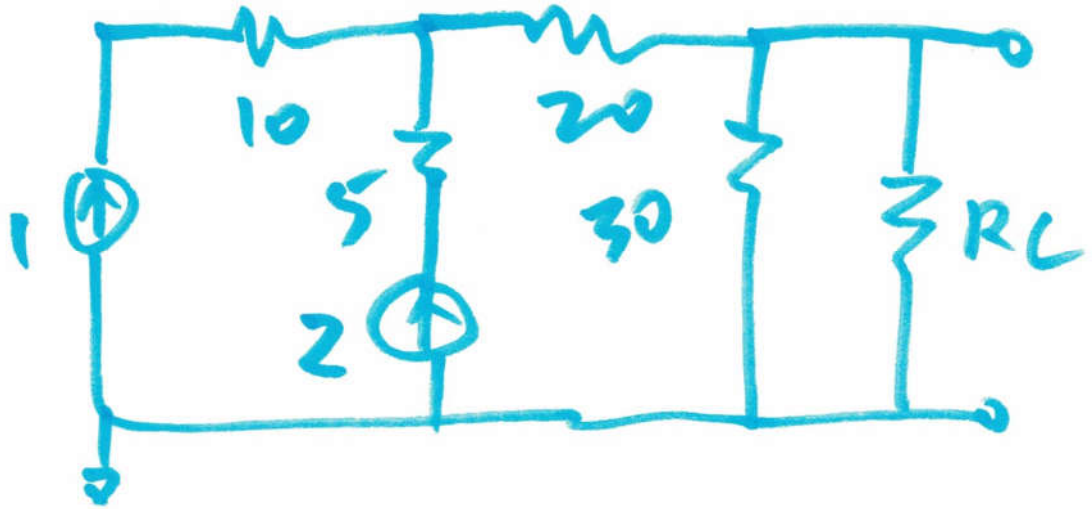
ETH:



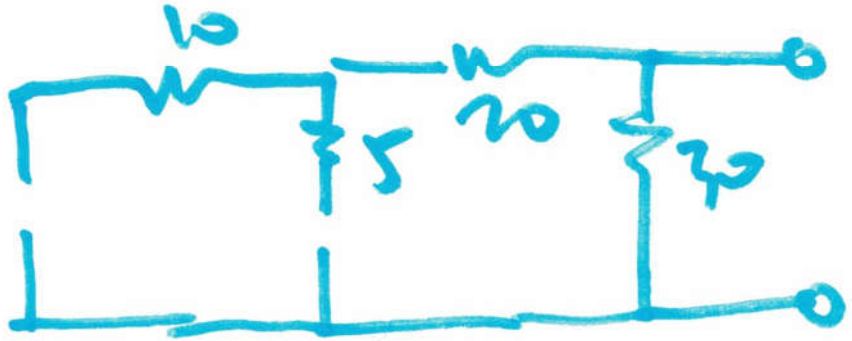
$$\begin{cases} -12 + 6\cdot i_1 + V_x = 0 \\ -V_x + 6\cdot i_2 + 4\cdot i_2 = 0 \\ i_2 - i_1 = 2 \end{cases}$$

$$\begin{cases} -12 + 6i_1 + 6i_2 + 4i_2 = 0 \\ i_2 - i_1 = 2 \Rightarrow i_2 = i_1 + 2 \end{cases}$$

8.

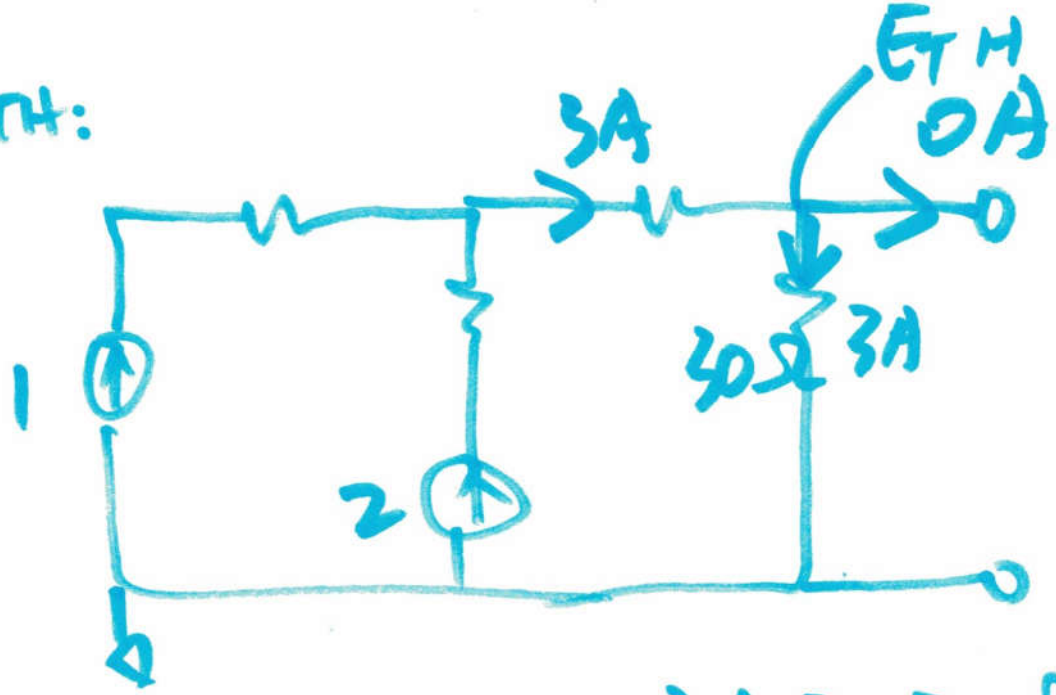


R_{TH}:

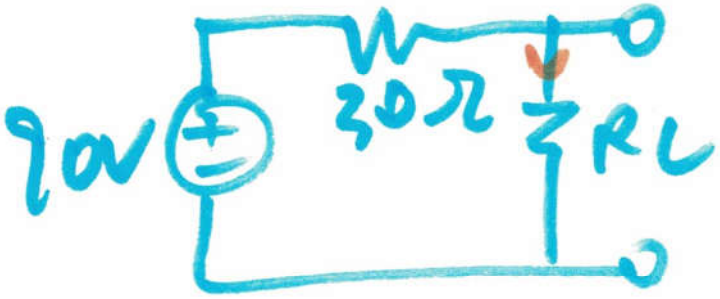


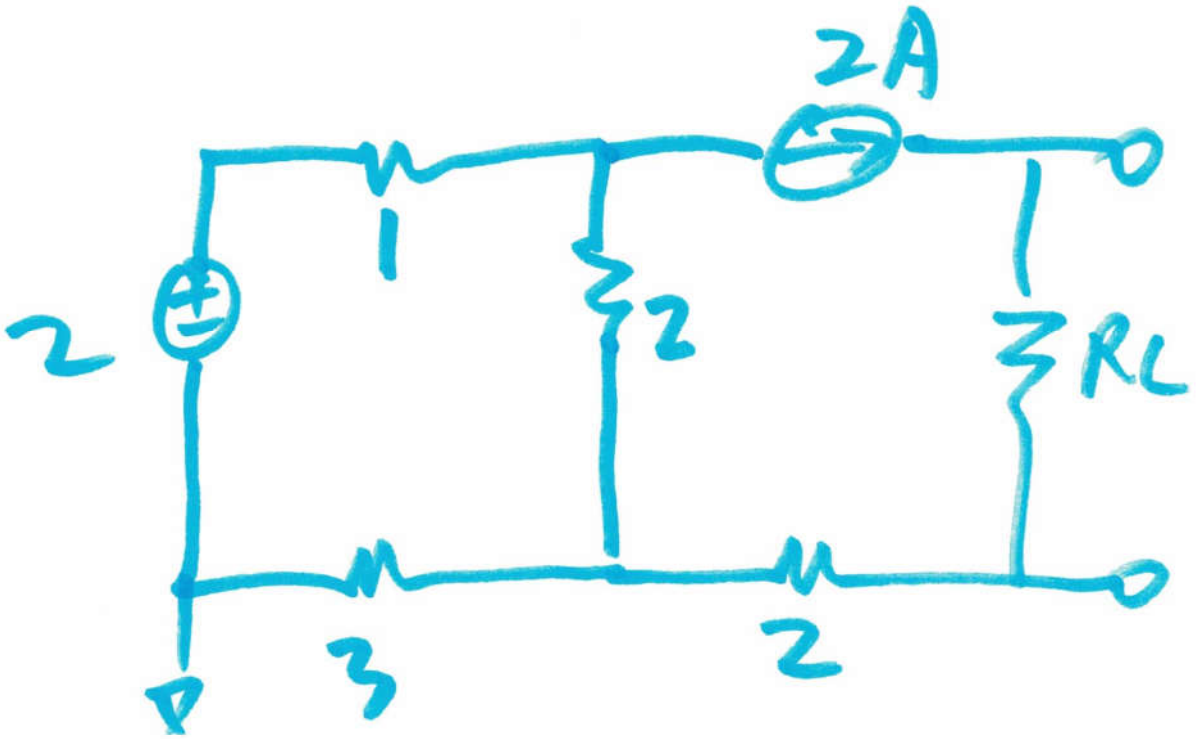
$R_{TH} = 30\,\Omega$

ETH:

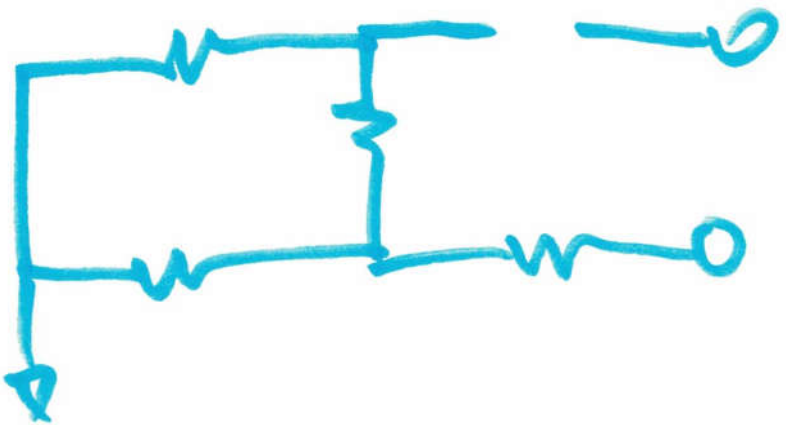


$E_{TH} = 3A \cdot 30\Omega = 90V.$



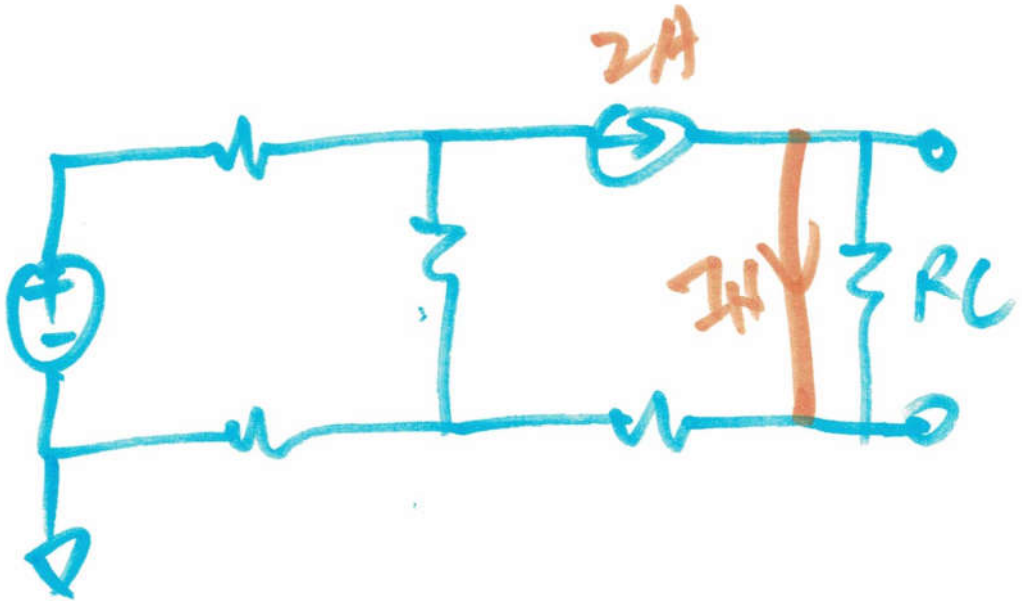


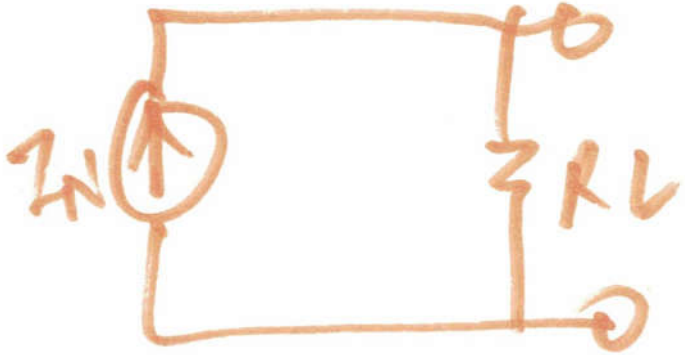
R_N:



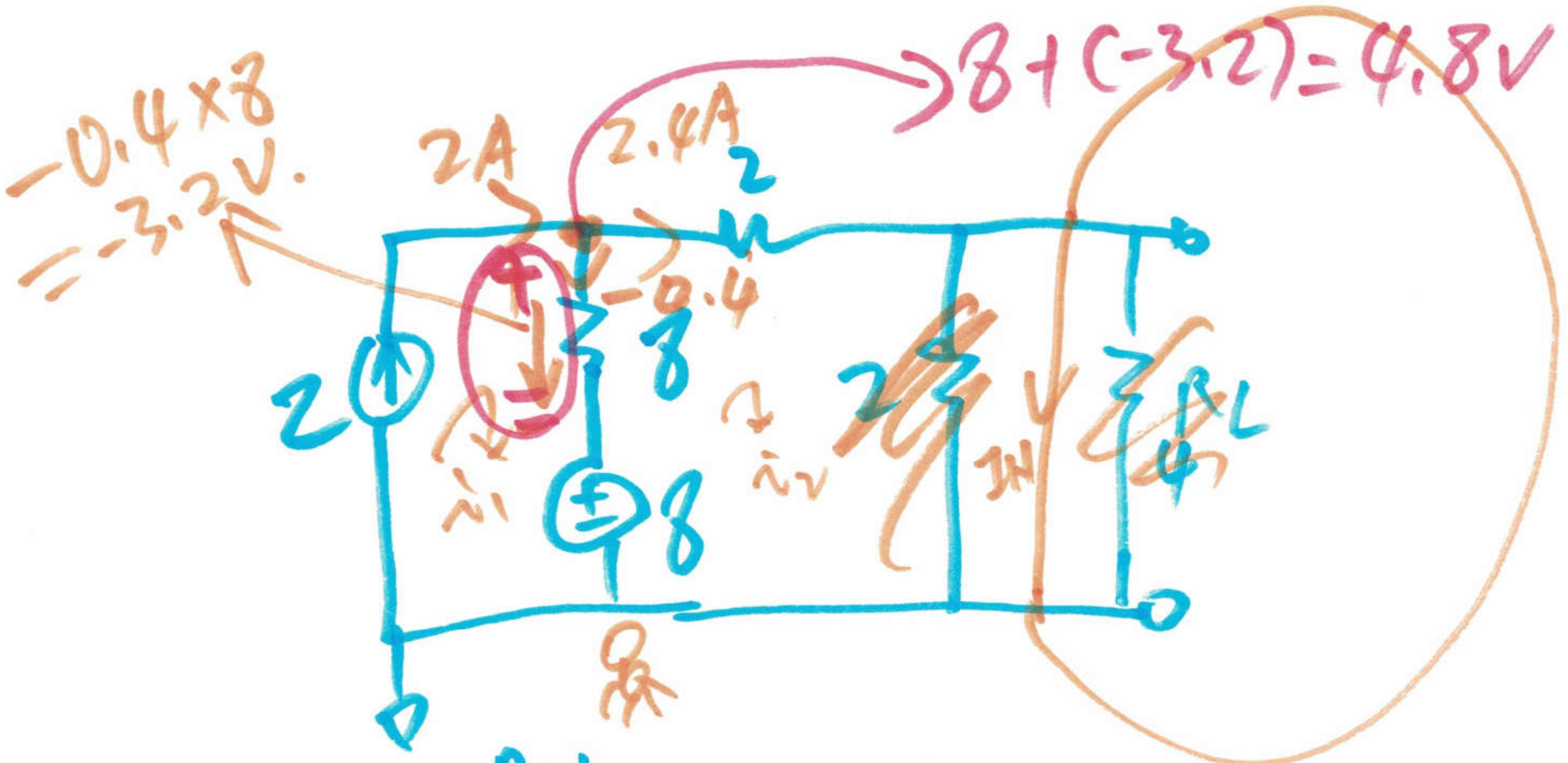
$R_N = \Omega$

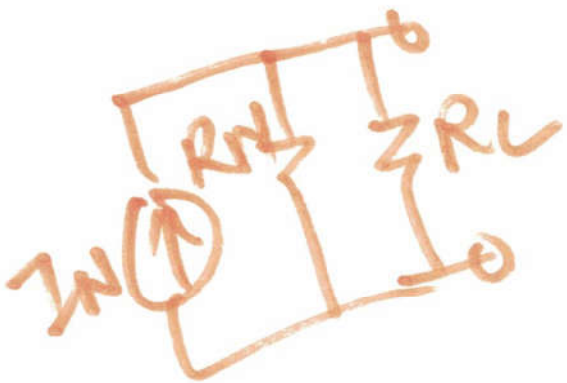
5

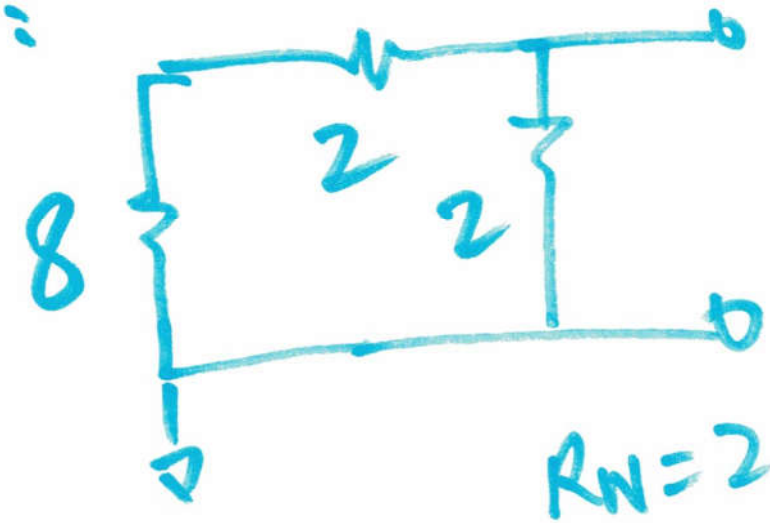




(b)







(1)

$$\begin{cases} i_1 = 2\,A \\ -8 + (i_2 - i_1)\cdot 8 + i_2 \cdot 2 = 0 \end{cases}$$

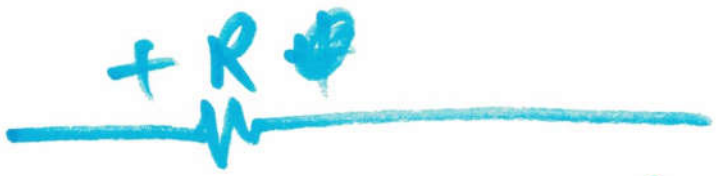
$$-8 + (i_2 - 2)\cdot 8 + i_2 \cdot 2 = 0$$

$$-8 + 8i_2 - 16 + i_2 \cdot 2 = 0$$

$$10 i_2 = 24$$

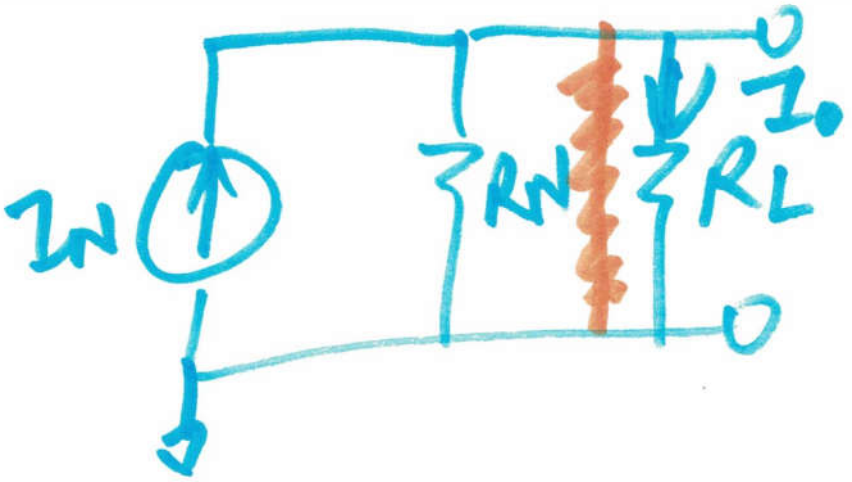
$$i_2 = 2.4\,A$$

$V = R \cdot I$



ohm's Law

(8)



$$I_o = \frac{R_N}{R_N + R_L} \cdot I_N$$