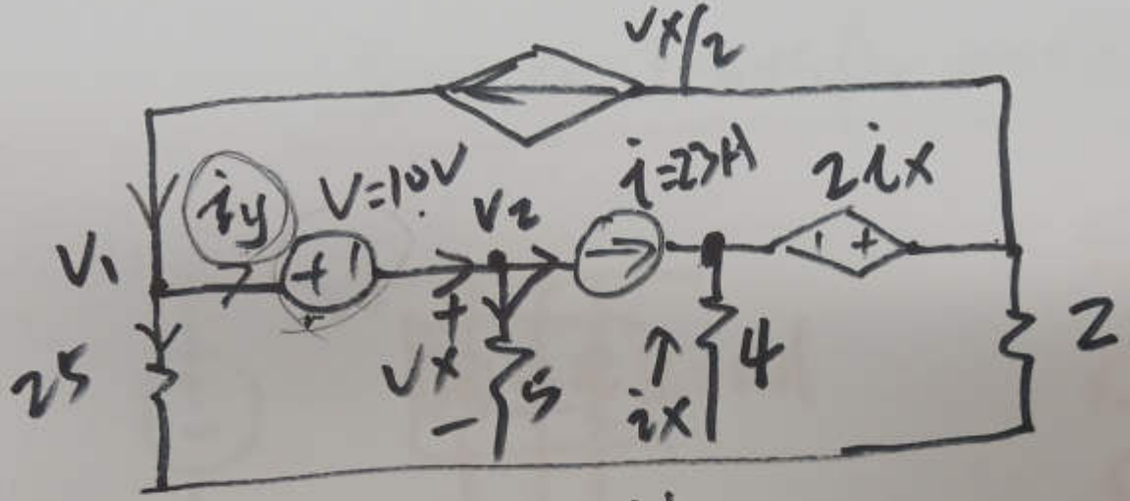
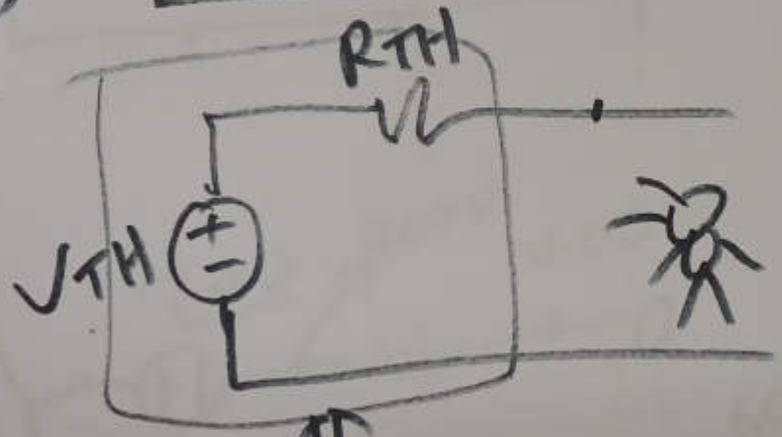


$$\begin{cases} V_x/2 = i_y + \dfrac{V_1}{25} \\ V_1 - V_2 = 10 \\ V_2 = V_x \\ i_y = \dfrac{V_2}{5} + 2 \end{cases}$$

Source Transformation

Equivalent Circuit Problems

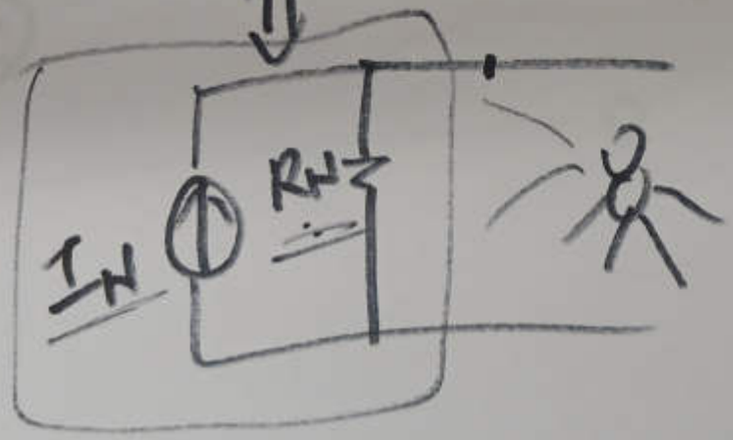
Thevenin's equivalent

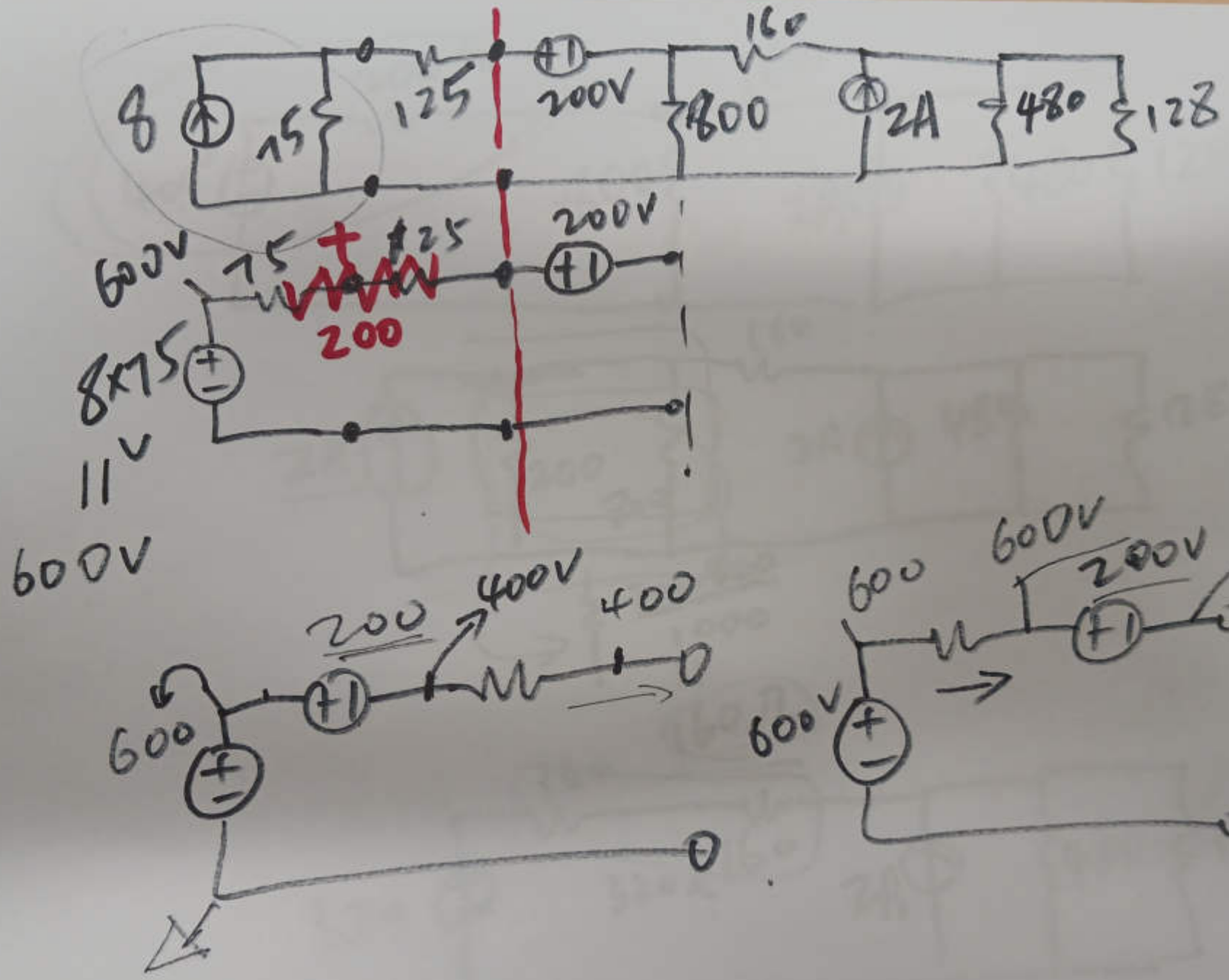


$R_{TH} = R_N$

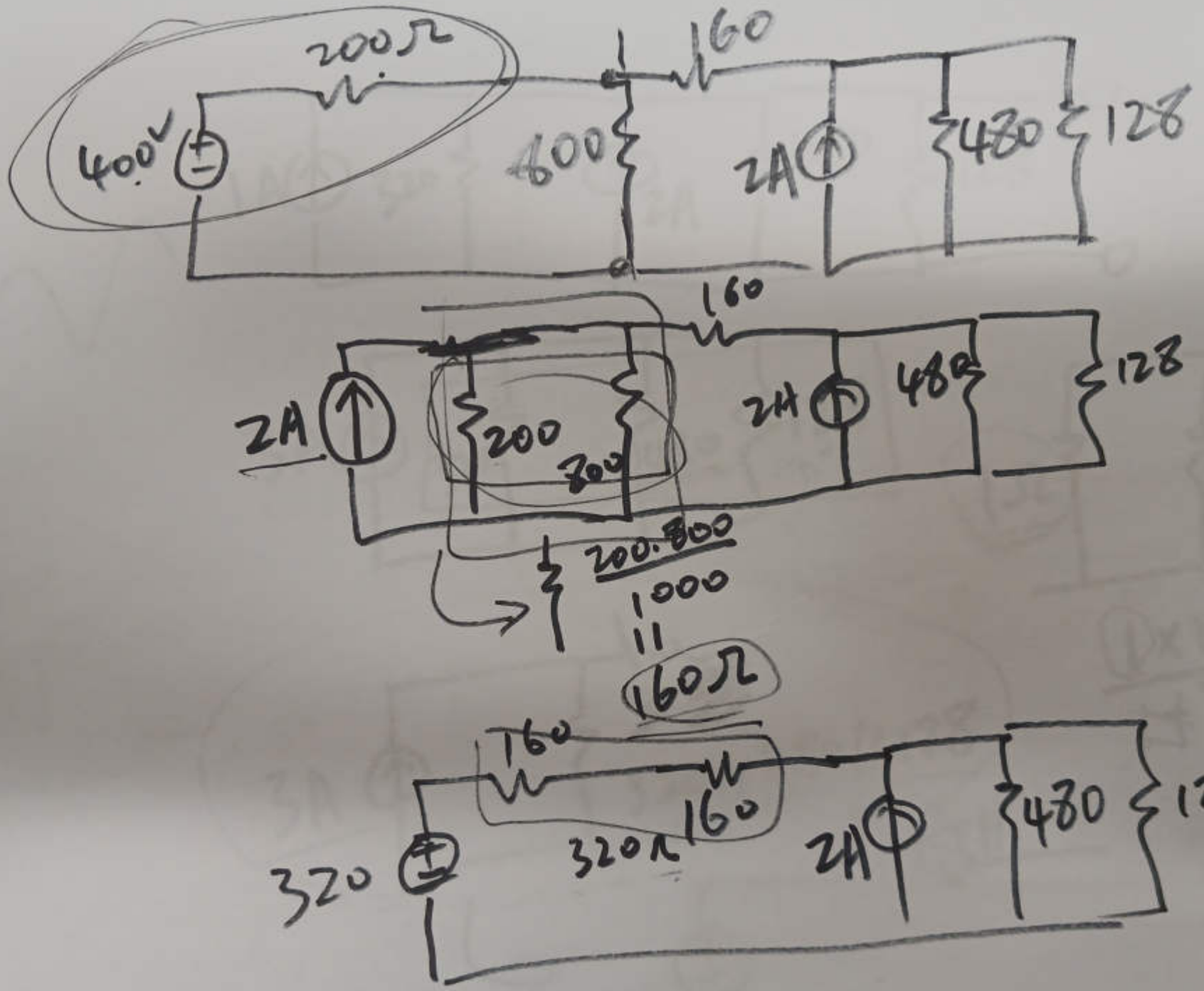
$\frac{V_{TH}}{R_{TH}} = I_N$

Norton's equivalent

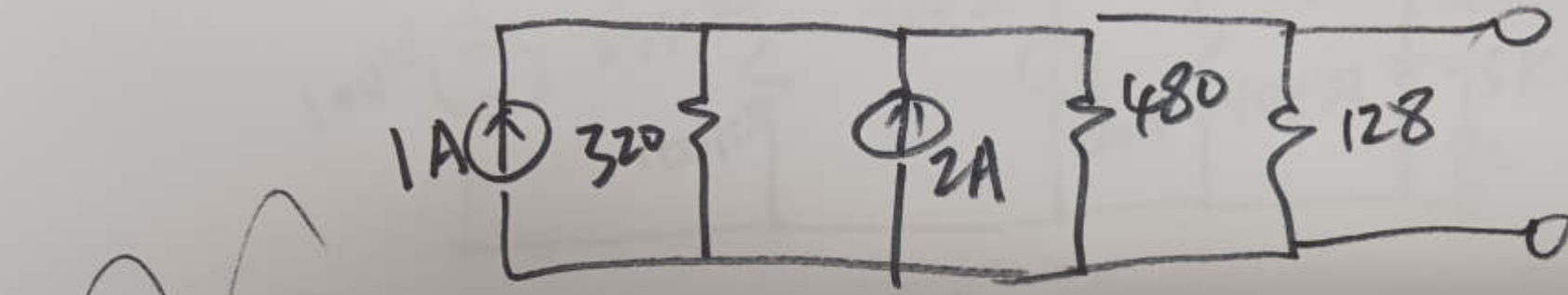


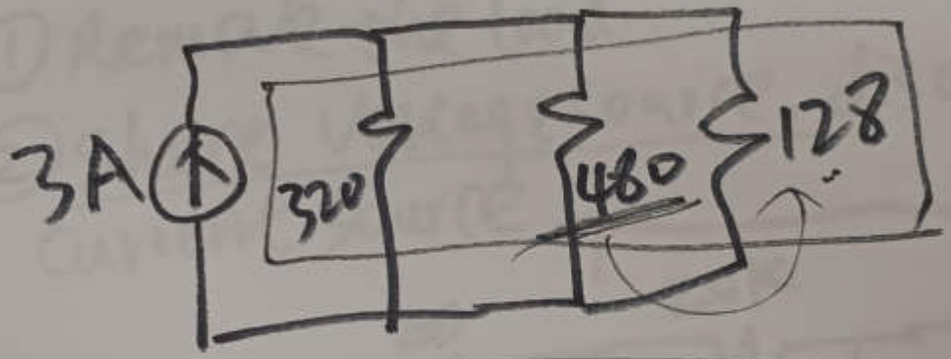

8
15
125
200V
800
160
2A
480
128
600V
15
125
200V
200
8x75
11
600V
200
400V
400
600
600V
200V
400V
600
600V

(3)

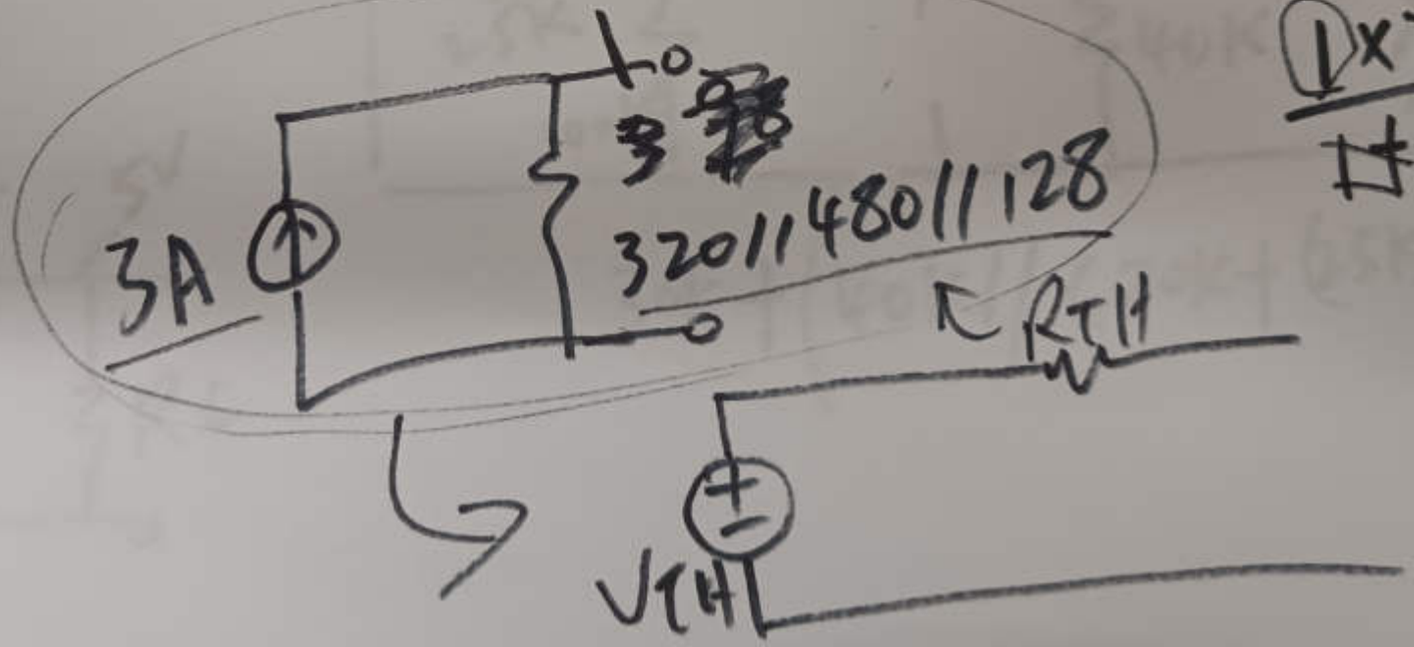

200Ω
160
400V
600
2A
480
128
160
2A
200
800
2A
480
128
200.800
1000
160Ω
160
160
320Ω
320
2A
480
128

(4)

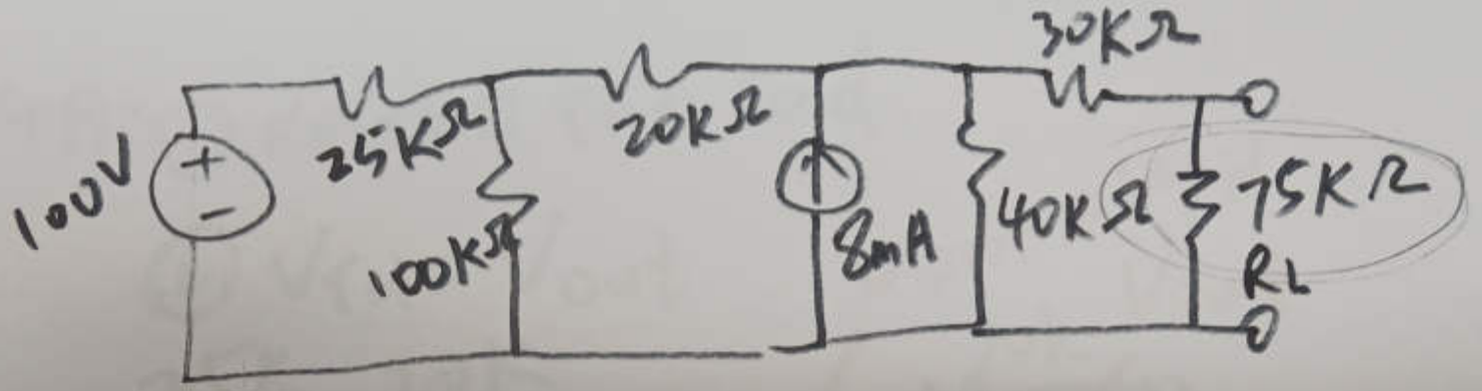




$$\frac{1\times10^{6}}{1\times10^{6}}$$

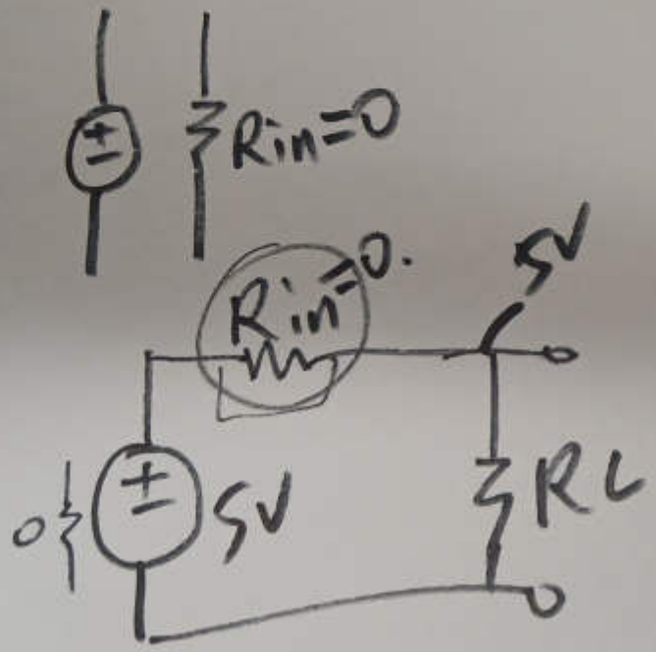


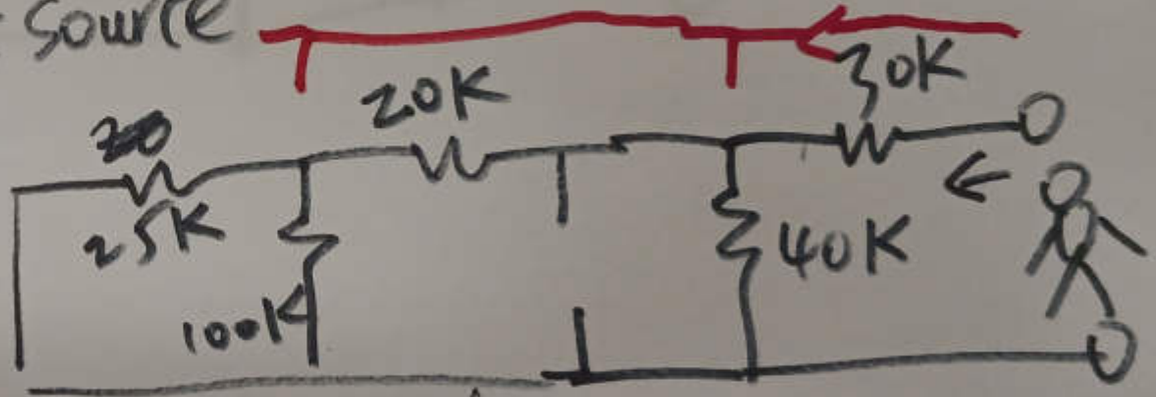
(5)



R_{TH}: ① Remove the load.

② Short voltage source, disconnect current source





$$30k + \left(40K \,//\, (20K + 25K // 100K)\right)$$

(6)

V_{TH}: ① Remove the load.

② $V_{TH} = V_{out}$