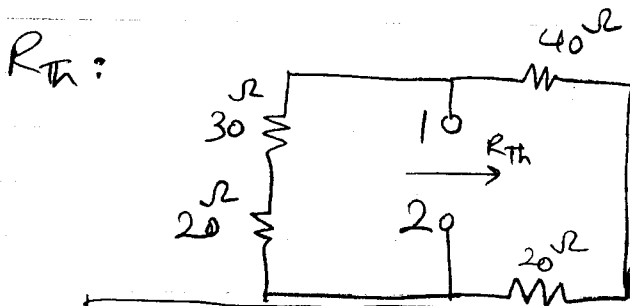
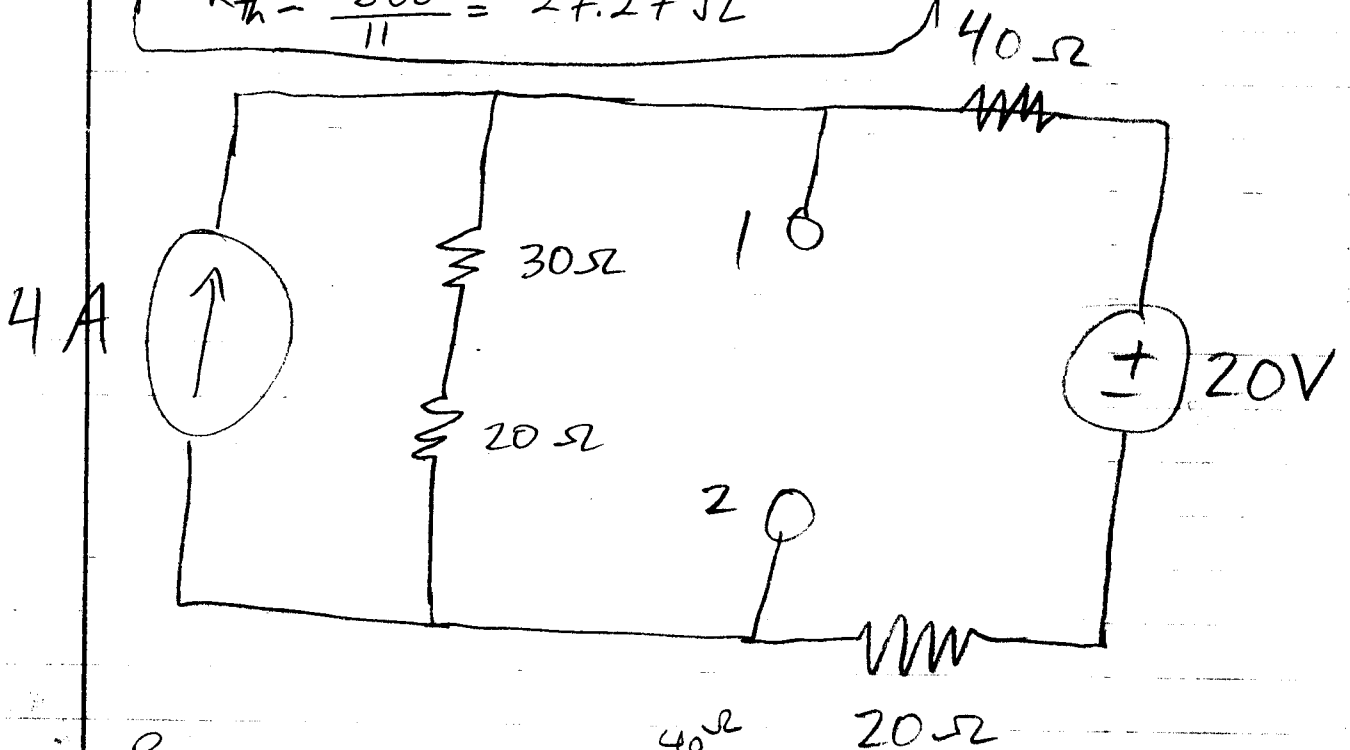


Find V_{Th} and R_{Th}

$$V_{Th} = \frac{1300}{11} \text{ V} = 118.18 \text{ V}$$

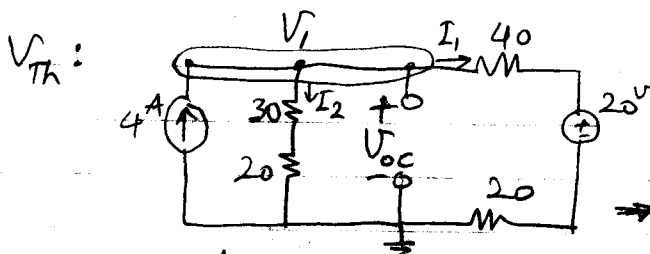
$$R_{Th} = \frac{300}{11} = 27.27 \Omega$$



$$R_{Th} = (30 + 20) \parallel (40 + 20)$$

$$= 50 \Omega \parallel 60 \Omega$$

$$\Rightarrow R_{Th} = 27.27 \Omega$$



$$V_{Th} = V_{OC} = V_1$$

$$V_1 = 40I_1 + 20V + 20I_1$$

$$\Rightarrow I_1 = \frac{V_1 - 20V}{60\Omega} \quad \& \quad I_2 = \frac{V_1}{50\Omega}$$

KCL:

$$-4A + \frac{V_1}{50\Omega} + \frac{V_1 - 20V}{60\Omega} = 0$$

$$\Rightarrow V_{Th} = 118.18 \text{ V}$$

$$\Rightarrow V_1 = \frac{1300}{11} = 118.18 \text{ V}$$