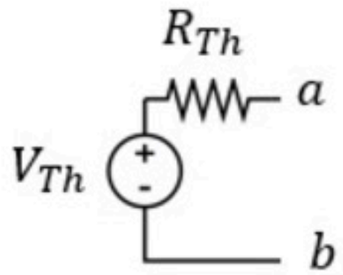
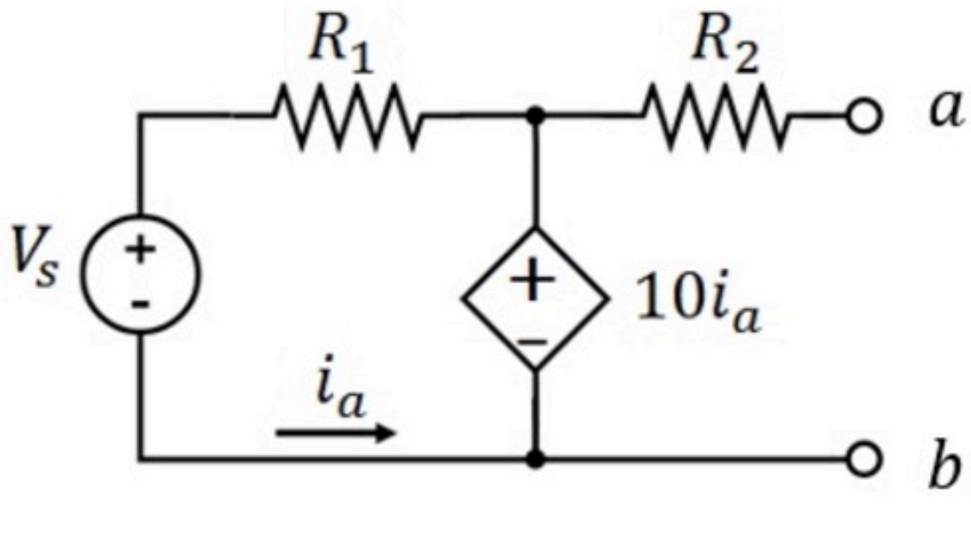
Circuit theorems 003

Unlimited Attempts.

Find the Thevenin equivalent model of this circuit, as seen between a and b.





Given Variables:

R1 : 9 ohm

R2 : 2 ohm

Vs : 5 V

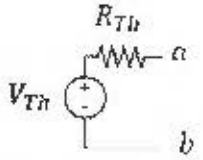
Calculate the following:

Vth (V) :

Rth (ohm) :

Hint: Find any two of Voc, Isc and Req

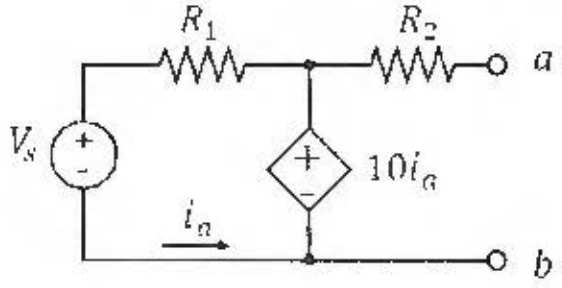
Find the Thevenin equivalent model of this circuit, as seen between a and b.

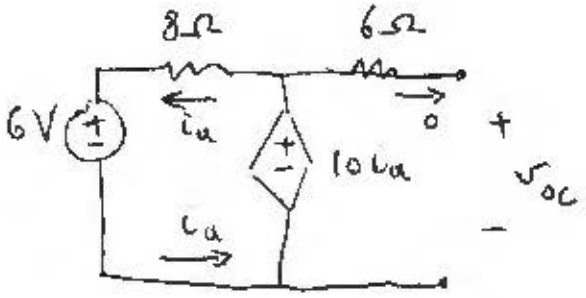


R1 = 8 ohm

R2 = 6 ohm

Vs = 6 V

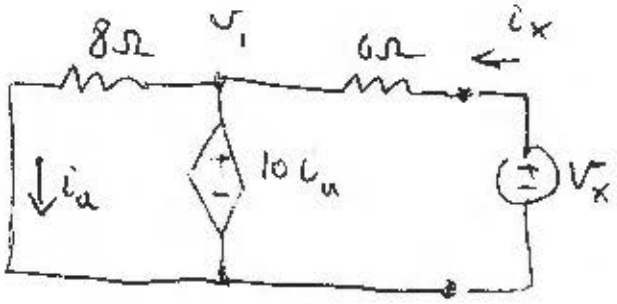




$$i_a = \frac{10 i_a - 6}{8}$$

$$2 i_a = 6 \Rightarrow i_a = 3\ A$$

$$v_{oc} = 10 i_a = 30 V$$



$$v_1 = 10 i_a = 8 i_a$$

$$2 i_a = 0 \Rightarrow i_a = 0$$

$$\Rightarrow i_x = \frac{v_x - 0}{6}$$

$$\Rightarrow \frac{v_x}{i_x} = 6\ \Omega$$

$R_{TH} = 6\ \Omega$

$V_{TH} = 30 V$