Problem 3.64 Find the Thévenin equivalent circuit at terminals (a, b) for the circuit in Fig. P3.64.

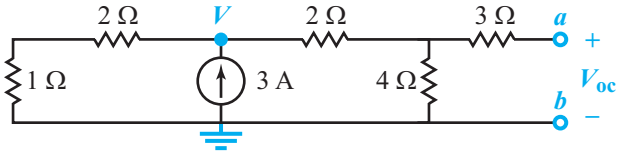


Figure P3.64: Circuit for Problem 3.64.

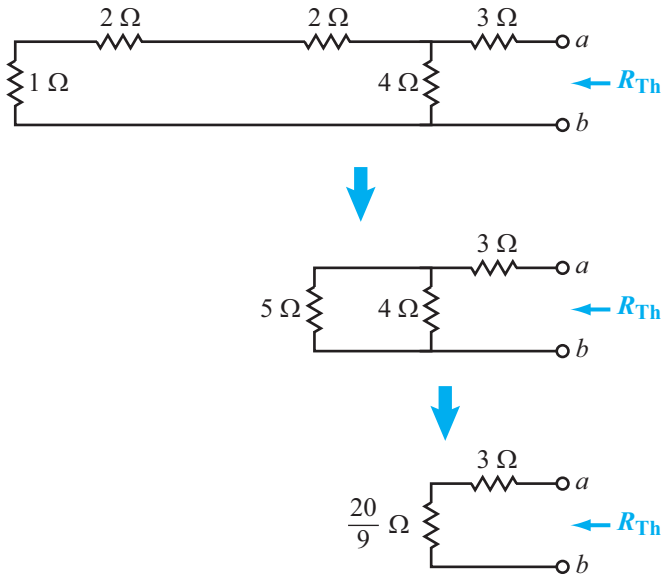
Solution:

$$\frac{V}{3} + \frac{V}{6} = 3$$
$$V = 6 \text{ V}.$$

Voltage division gives

$$V_{\text{Th}} = V_{\text{oc}} = \frac{V}{6} \times 4 = 4 \text{ V}.$$

Suppressing the current source:



$$R_{\text{Th}} = 3 + \frac{20}{9} = \frac{47}{9} = 5.2 \ \Omega.$$

Thévenin equivalent circuit: