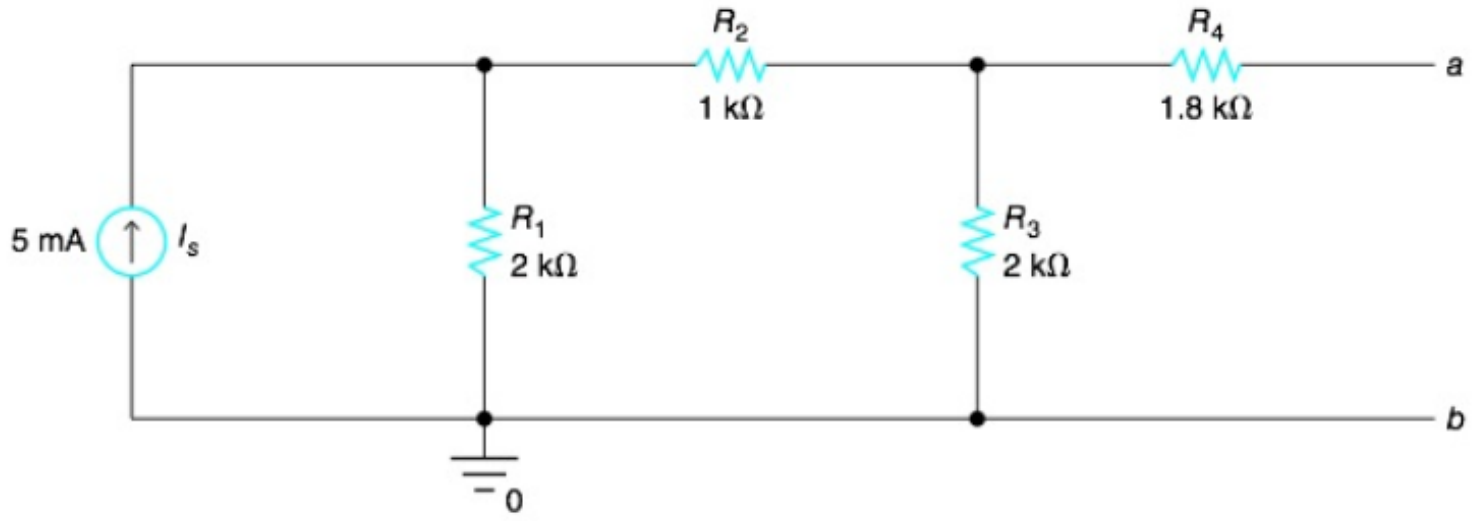
Tutorial 3 for CAD
Sample Questions and Exercises

2020-21

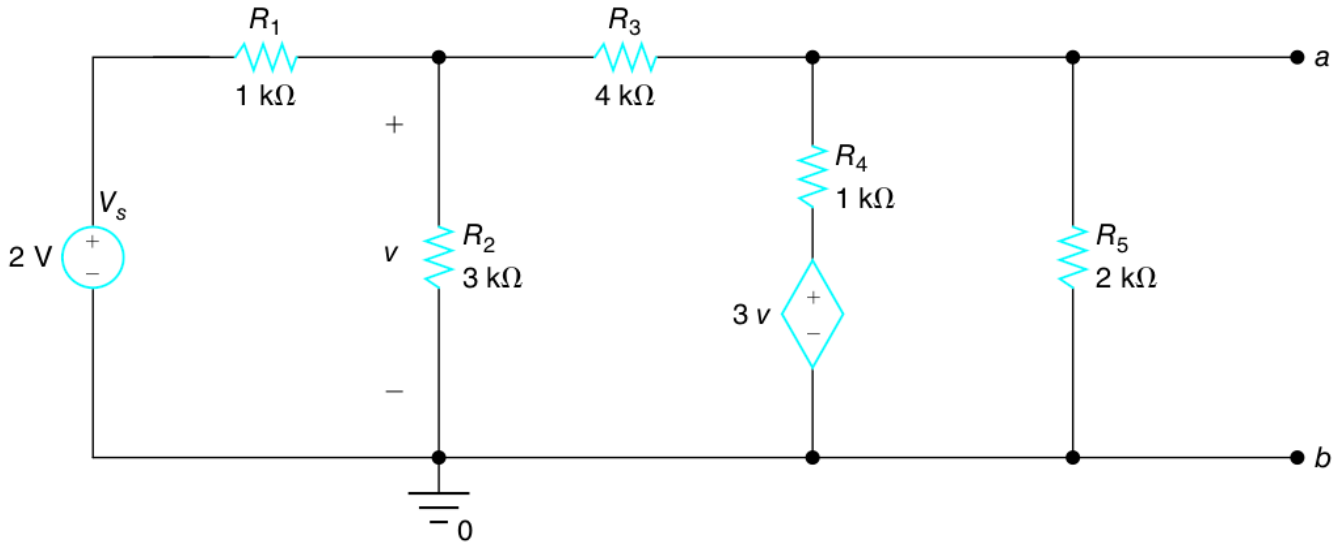
1 Thevenin Equivalent Circuit

- Fin the Thevenin equivalent circuit between a and b for the circuit shown below



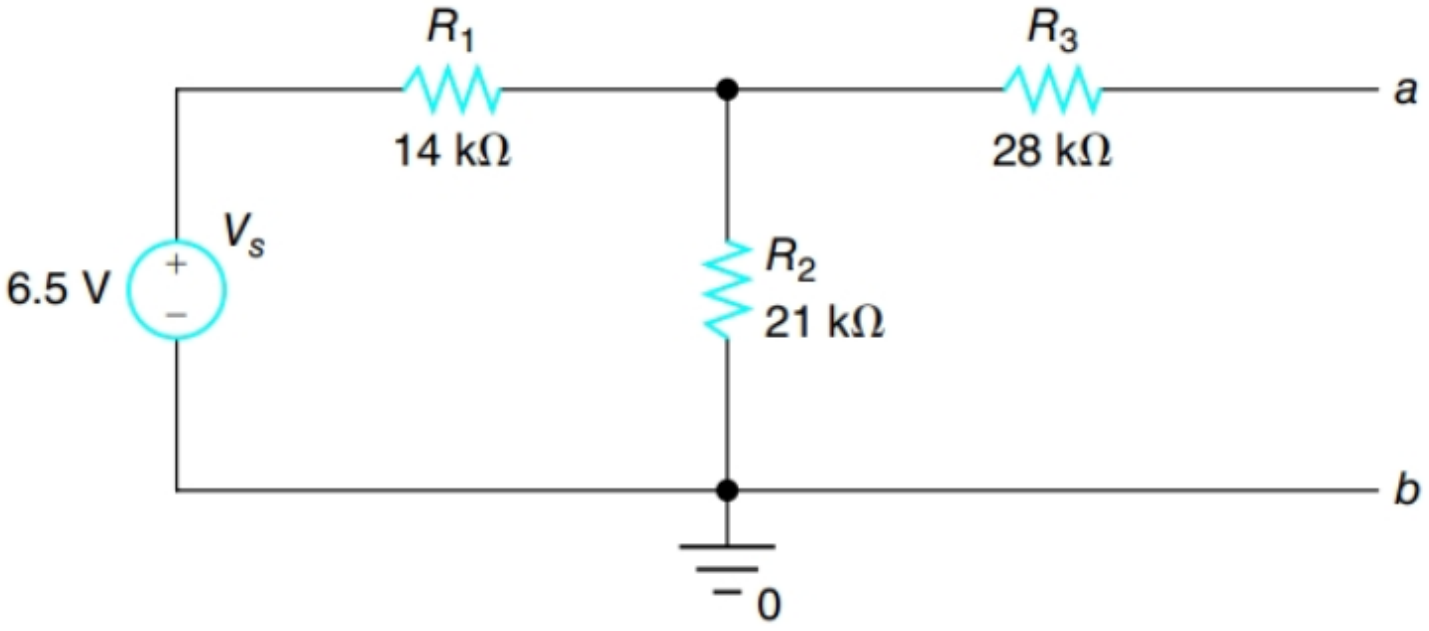
2 Thevenin Equivalent Circuit

- Fin the Thevenin equivalent circuit between a and b for the circuit shown below



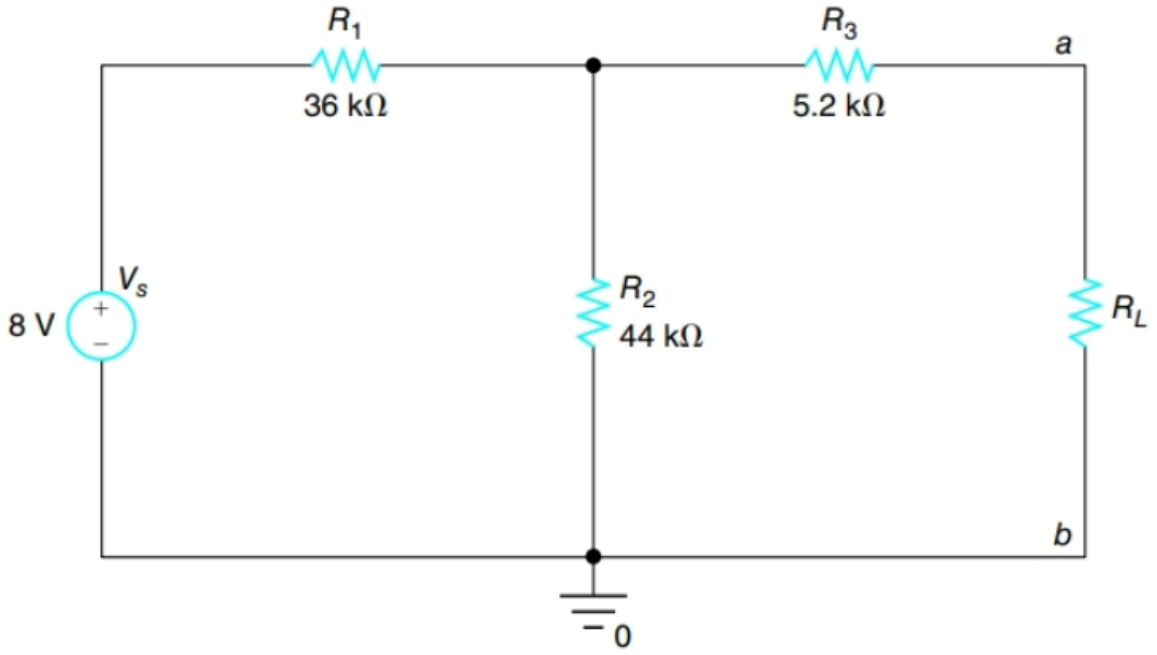
3 Norton Equivalent Circuit

- Find the Norton equivalent circuit between a and b for the circuit shown below



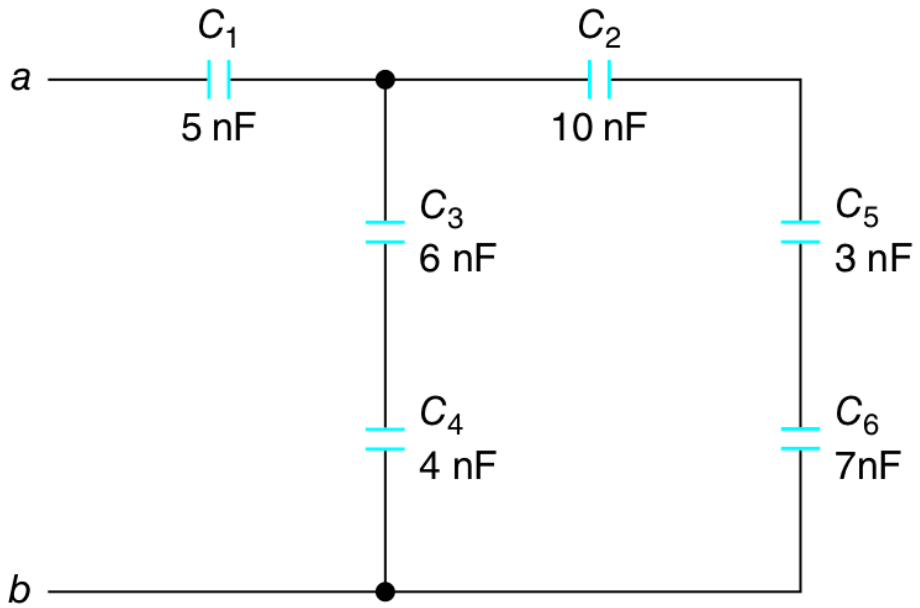
4 Maximum Power Transfer

- Find the load resistance value R_L for maximum power transfer, and find the maximum power transferred to the load for the circuit shown below



5 Capacitors

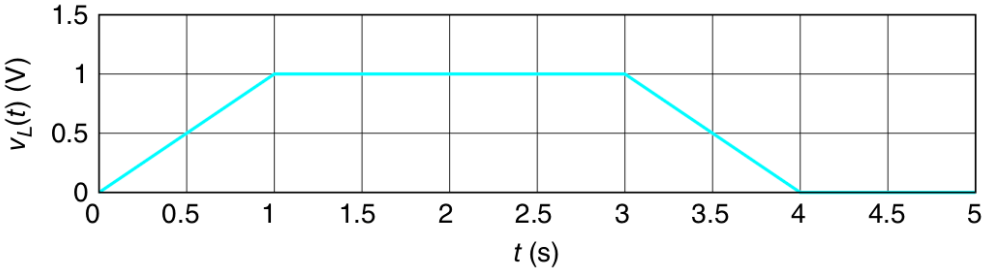
- Find the equivalent capacitance between a and b for the circuit shown in Figure below:



6 Inductors

- The voltage across an inductor with inductance of 510 mH is given by as $v_L(t)$ and shown in the figure below:

$$v_L(t) = \begin{cases} t, & 0 \le t < 1 \\ 1, & 1 \le t < 3 \\ -t + 4, & 3 \le t < 4 \\ 0, & otherwise \end{cases} \text{ V}$$



a) Find and plot the current through the inductor $i_L(t)$.

b) Find and plot the instantaneous power $p(t)$ on the inductor.

c) Find and plot the instantaneous energy $w(t)$ stored on the inductor.