ELEC 344 - 201: Applied Electronics and Electromechanics

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Tutorial 1

1) Series and Parallel Inductors and Capacitors.
    a) Find the equivalent capacitance of n capacitors connected in series.
    b) Find the equivalent capacitance of n capacitors connected in parallel.
    c) Find the equivalent inductance of n inductors connected in series.
    d) Find the equivalent inductance of n inductors connected in parallel.

2) A Solving DC networks using mesh and nodal analysis methods. For the circuit shown in Fig. 1, find:
    a) The current being supplied by the voltage source ($\boldsymbol{I_1}$)
    b) The current through the $\mathbf{3\Omega}$ resistor ($\boldsymbol{I_2}$)
    c) The voltage at node A ($\boldsymbol{V_A}$)
    d) The voltage at the current source terminals ($\boldsymbol{V_I}$)

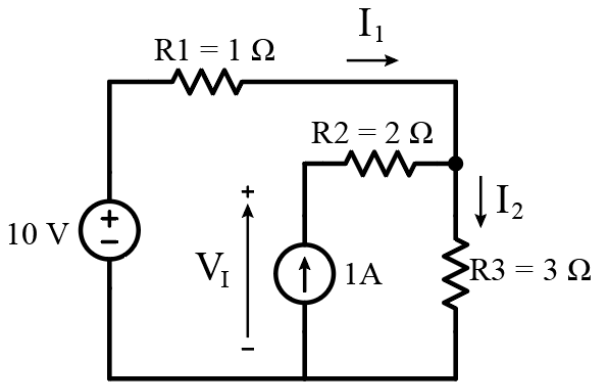

Figure 1 – DC Circuit

3) Thevenin and Norton equivalent circuits. Find the Thevenin and Norton equivalent circuits for the circuit shown in Fig. 1, taking the **3Ω** resistor as the load.

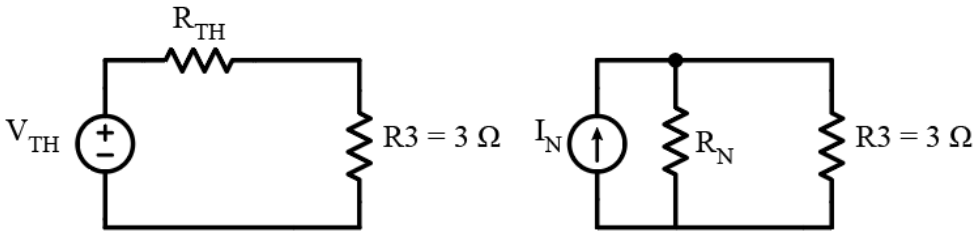

Figure 2 – Thevenin and Norton equivalent circuits