

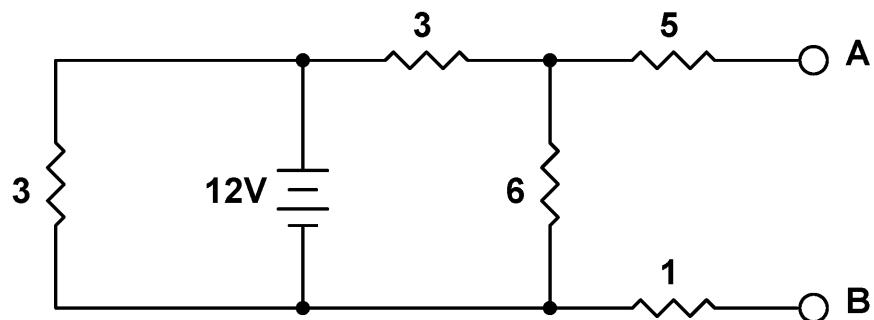
ECE 2350 CIRCUIT ANALYSIS I

Homework 4
11 February 2020

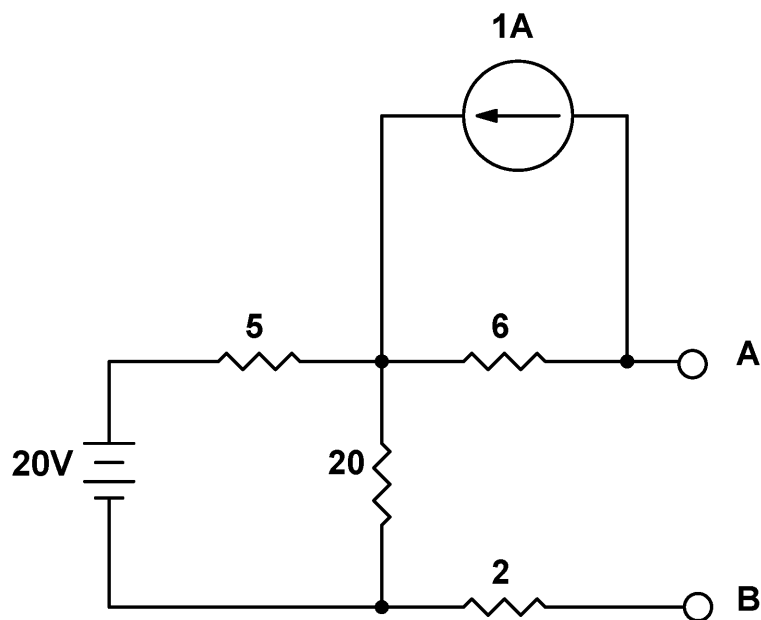
Professor Dunham
Due: 20 February 2020

Review Lecture Notes.

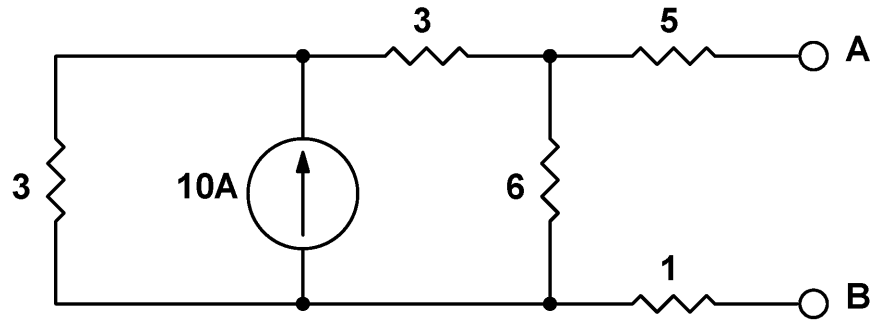
1. For the circuit shown below, find the Thevenin and Norton equivalent at the terminal AB.



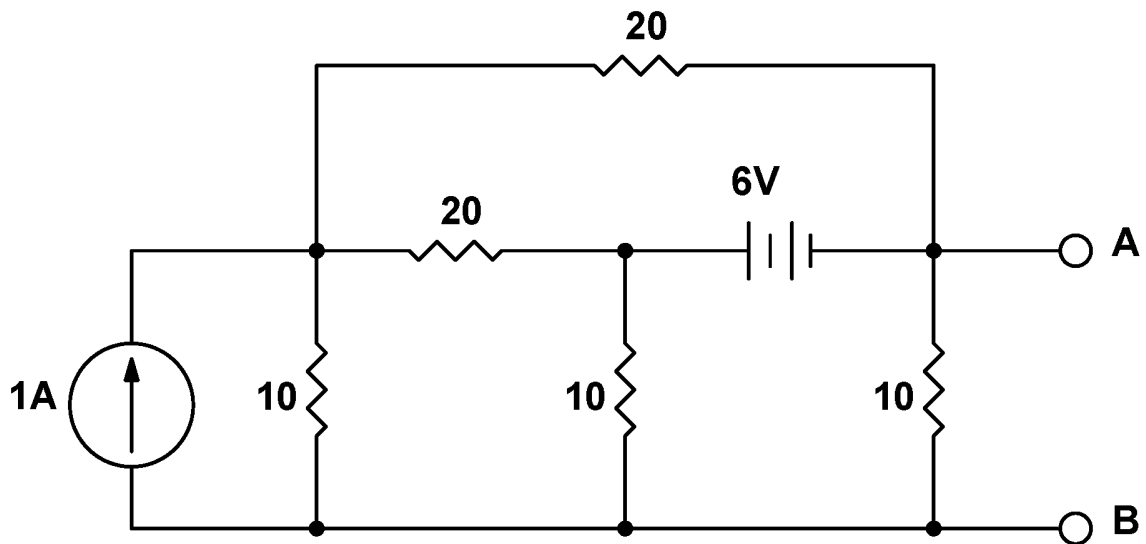
2. For the circuit shown below, find the Thevenin and Norton equivalent at the terminal AB.



3. For the circuit shown below, find the Thevenin and Norton equivalent at the terminal AB.



4. For the circuit shown below, find the Thevenin and Norton equivalent at the terminal AB.



5. Calculate the maximum power that can be extracted from the AB terminals of:

- (a) Circuit of Problem 1.
- (b) Circuit of Problem 2.
- (c) Circuit of Problem 3.
- (d) Circuit of Problem 4.

6. A signal source generates a periodic voltage $v(t)$ where one period is described by

$$\begin{cases} 3 & 0 \leq t < 1 \\ -1 & 1 \leq t < 2 \\ 1 & 2 \leq t < 3 \\ 0 & 3 \leq t < 4 \end{cases}.$$

(a) Sketch two periods of $v(t)$.

(b) Calculate V_{rms} .

7. A signal source generates a periodic voltage $v(t)$ where one period is described by

$$\begin{cases} 2t & 0 \leq t < 1 \\ 2 & 1 \leq t < 2 \\ 6 - 2t & 2 \leq t < 3 \end{cases}.$$

(a) Sketch one period of $v(t)$.

(b) Calculate V_{rms} .