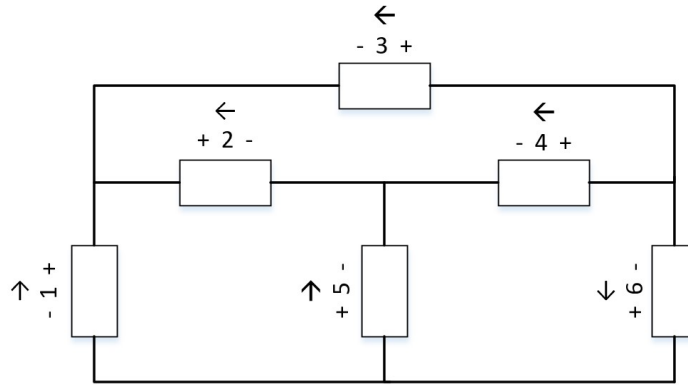
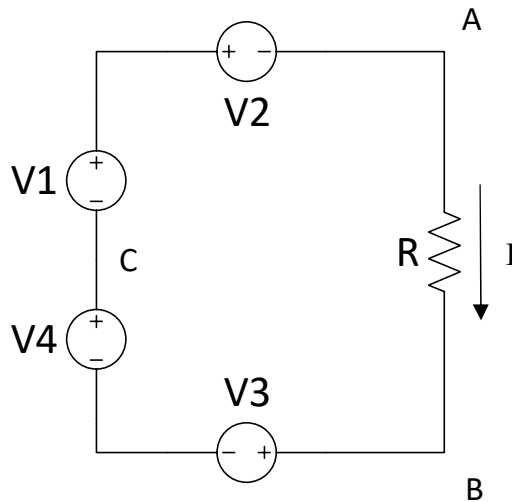


ECE 110 Exam 1 Review Session Worksheet

1. Given that $V_1 = -9V$, $V_3 = 5V$, $V_4 = -6V$ and $I_2 = -2A$, $I_3 = 5A$, $I_6 = -7A$, find the remaining unknown voltages and currents, and power for each component. Be careful of signs!

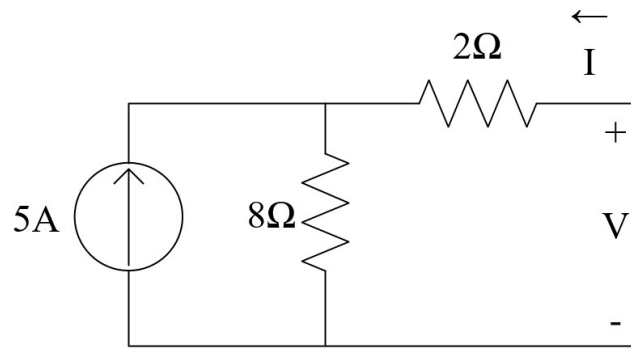


2. Given that $V_1 = 1V$, $V_2 = -6V$, $V_3 = 7V$, $V_4 = -2V$, and $R = 10\Omega$, determine V_{AB} , V_{BC} , and I .



3. Consider a PWM waveform with duty cycle = 64%, peak-to-peak voltage = 5V, and frequency = 20kHz.
- What is the V_{rms} of this PWM waveform?
 - Suppose we know that this PWM can deliver an average power of 0.25W to an unknown resistor. What is the resistance of this unknown resistor?
 - Suppose we want to generate a sinusoidal waveform that provides the same average power. What should be the amplitude of this sinusoid?
 - Does the frequency of the sinusoid matter?

4. Find the I-V Characteristic of the following circuit. Be careful of the direction of I!



5. Compute the power of each of the following elements.

