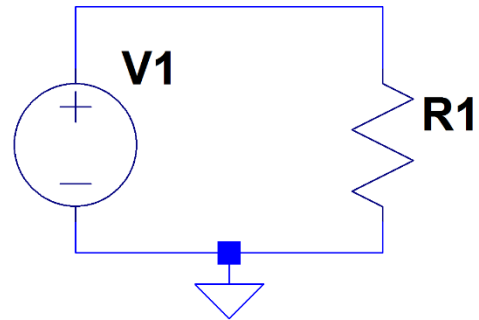


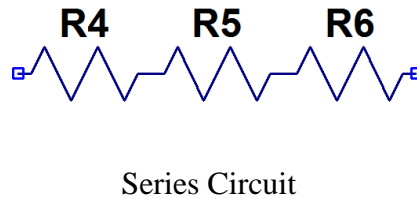
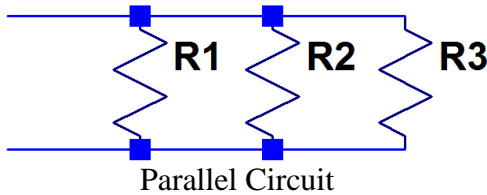
Part A: Multiple Choice (20 Points)

The following questions are found on LMS under Quiz 1 Part A. This sheet provides figures and a general restatement of each question.

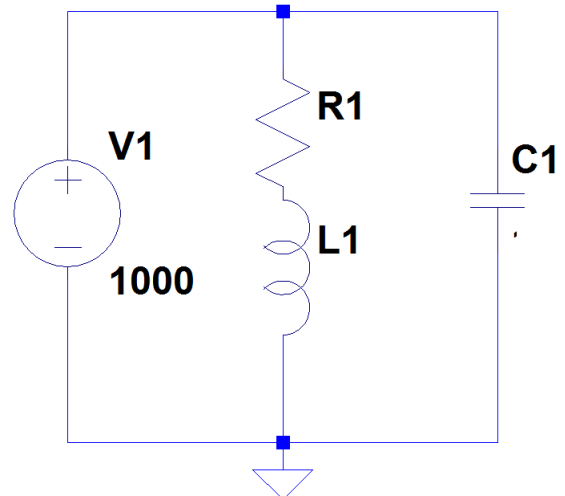
1. (3 Pts) Ohm's Law: What is the current I passing through the resistor $R1$ due to the voltage source $V1$? Values for $V1$ and $R1$ are given.
2. (3 Pts) Power to Resistor: What is the power delivered to the resistor in the circuit of question 1?



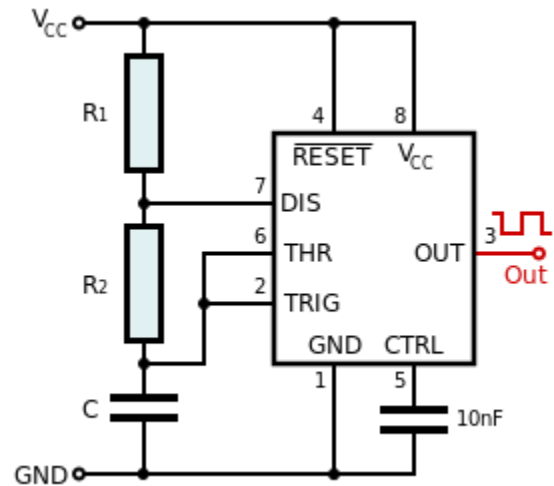
3. (2 Pts) Resistors in Series: Find the total resistance of the three resistors in series.
4. (2 Pts) Resistors in Parallel: Find the total resistance of the three resistors in parallel.



5. (3 Pts) Energy Stored in L and C: In the circuit at the right, we have a configuration like the LC oscillator we have studied in class except that the inductance, capacitance and voltage levels may be much higher. The voltage $V1$ is DC.



6. (4 Pts) A 555 timer chip is used to make an astable multivibrator circuit using two specified resistors R1 and R2 and a capacitor C. If you are free to use the two resistors in either position in the circuit, what is the minimum duty cycle you can create?



7. (3 Pts) Duty Cycle of PWM: Using the information in the LMS problem statement, determine the average voltage for this PWM signal. Disregard any scale information on the plot below.

