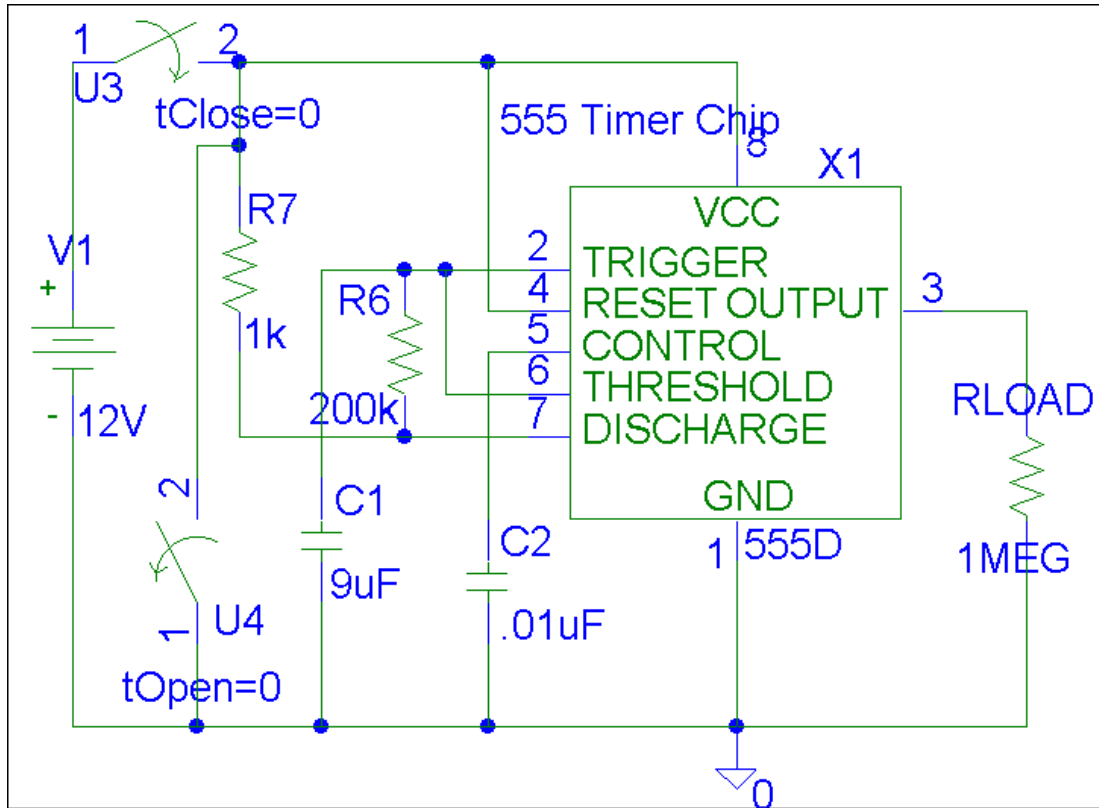
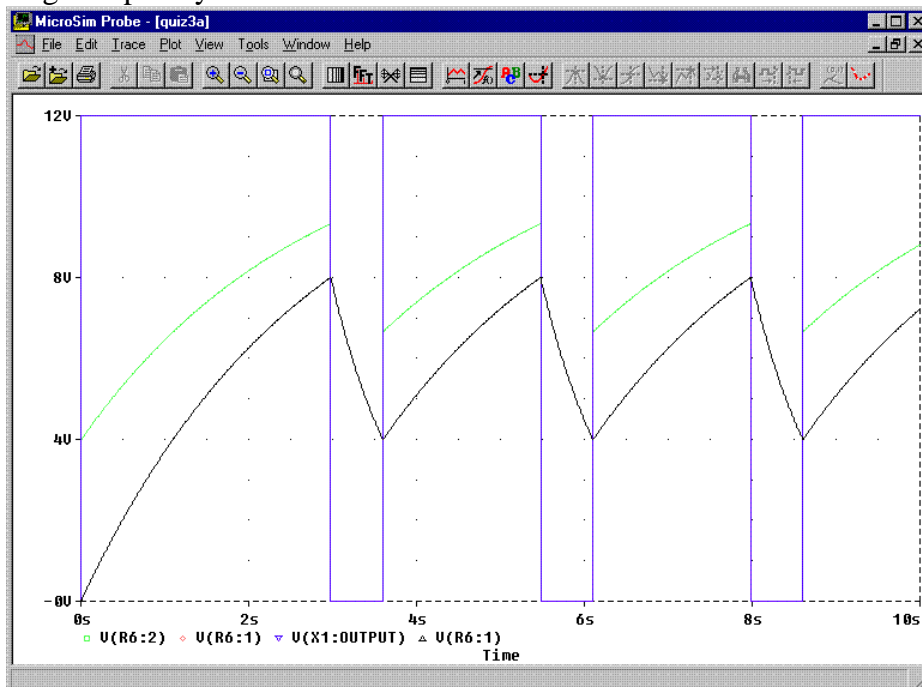


Quiz 3

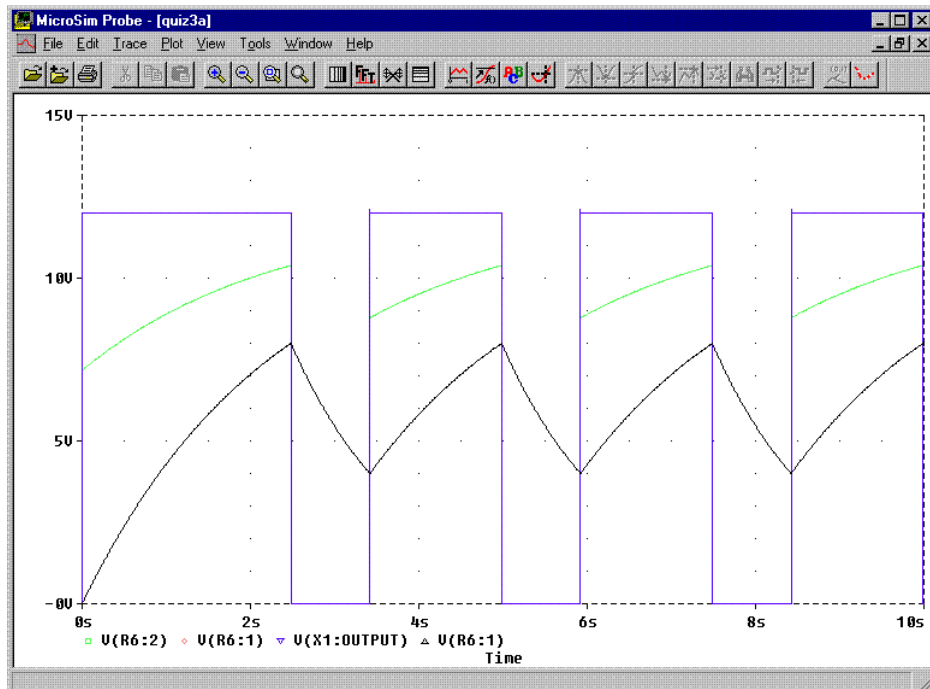
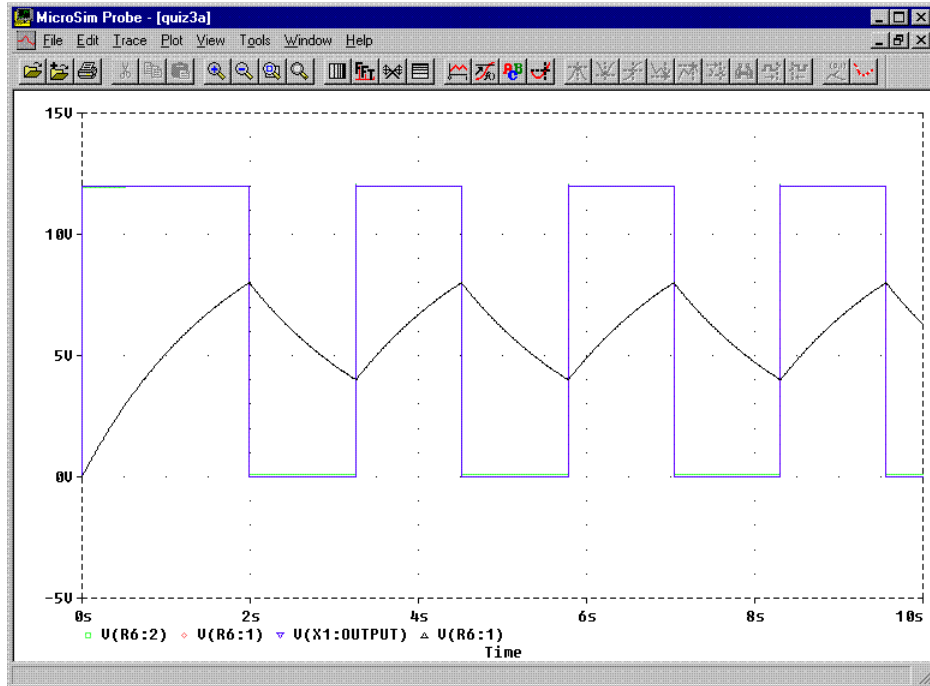
1. Astable Multivibrator



The circuit above has been simulated using PSpice. Using PROBE, the voltages at pins 2, 6, 7, and 3 have been displayed. Which of the three following plots will be observed? Since all four voltages are shown on the same plot, indicate which curve corresponds to which voltage. Explain your answer below.

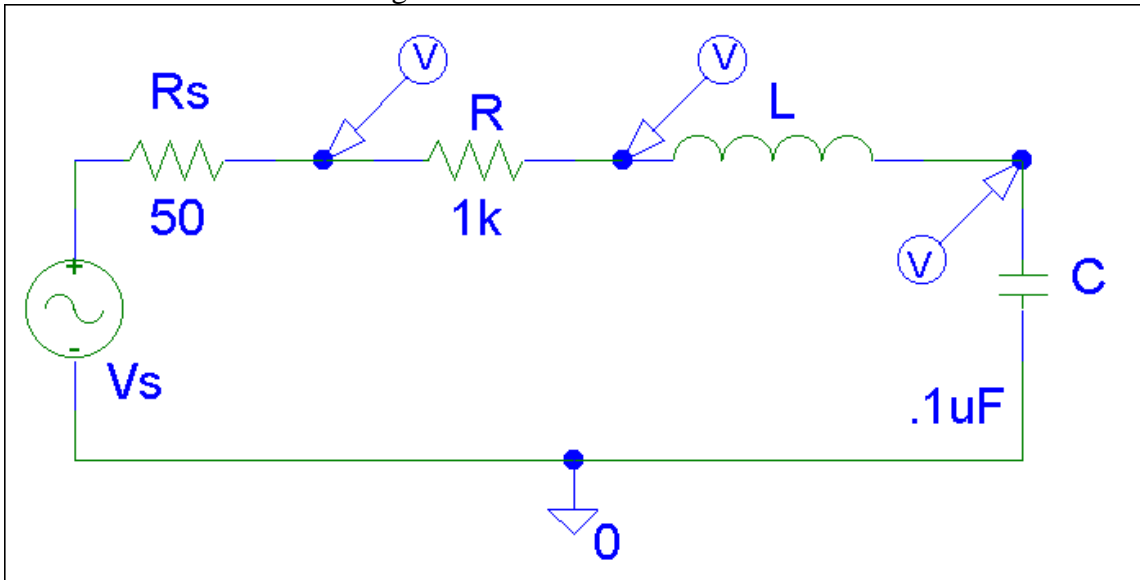


Name _____

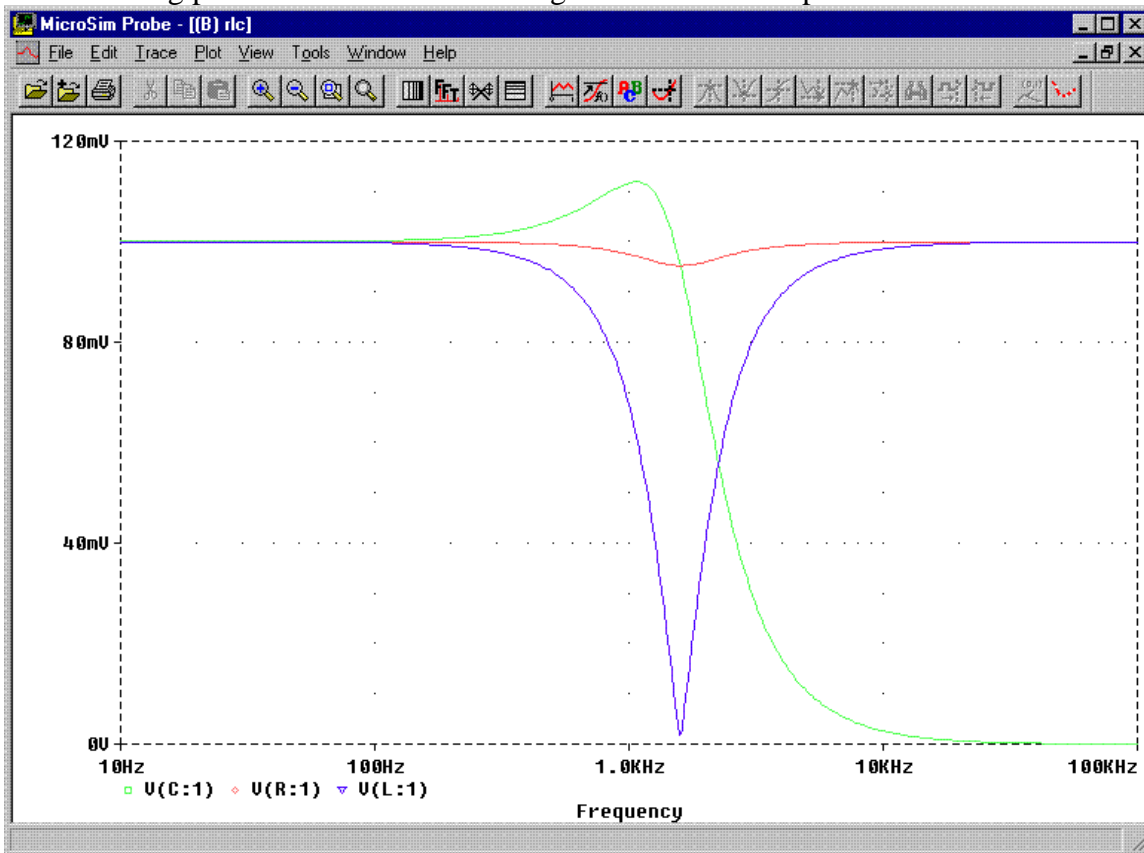


2. Inductance Measurement

The following circuit is constructed using an unknown inductor, a known capacitor, a known resistor and a function generator.



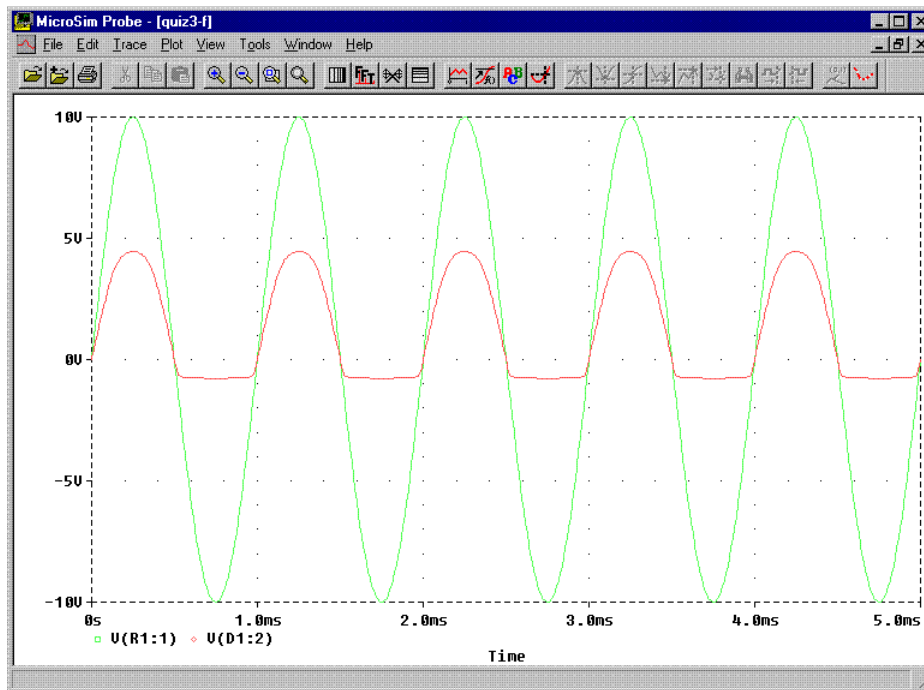
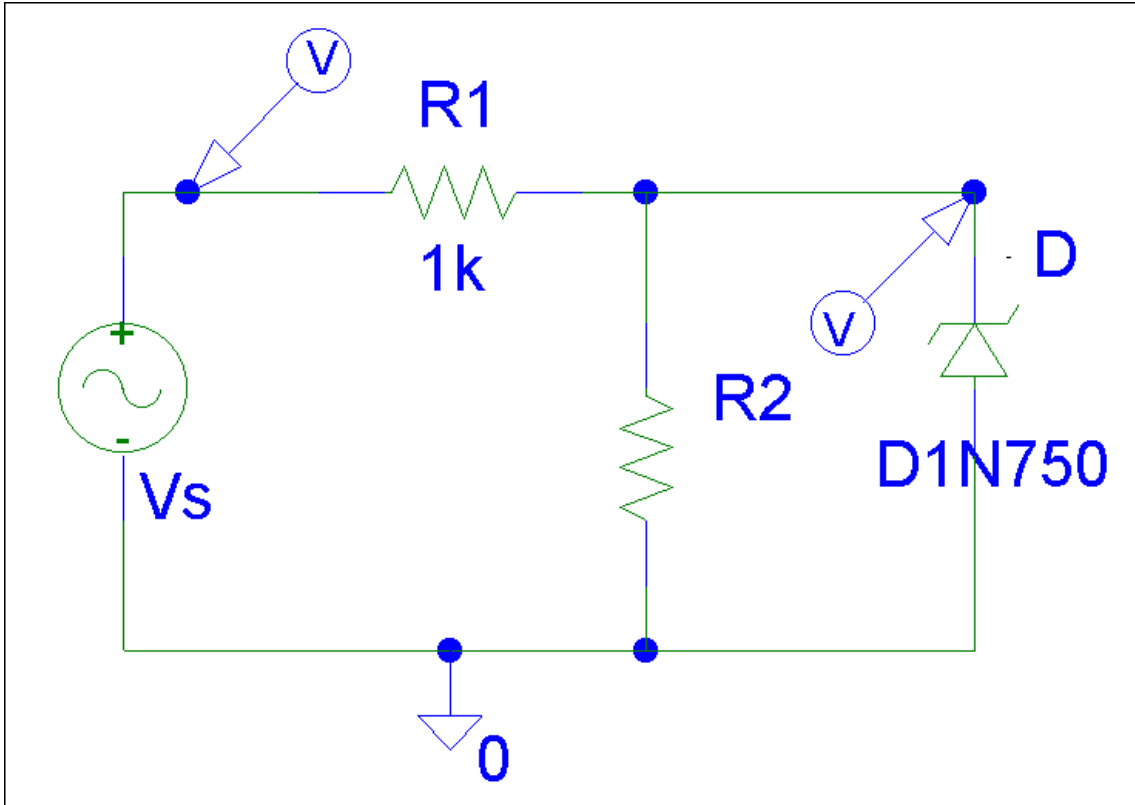
The following plot is obtained for the voltages at the indicated points in the circuit.



Determine the value of the unknown inductance.

3. Zener Diode Voltage Regulation

A zener diode is used to regulate the voltage across the load resistor R2 in the circuit below. Three different values for R2 are tried (50Ω, 1kΩ and 1MΩ), producing the three plots which follow. Identify which plot goes with which voltage. Explain your answer.

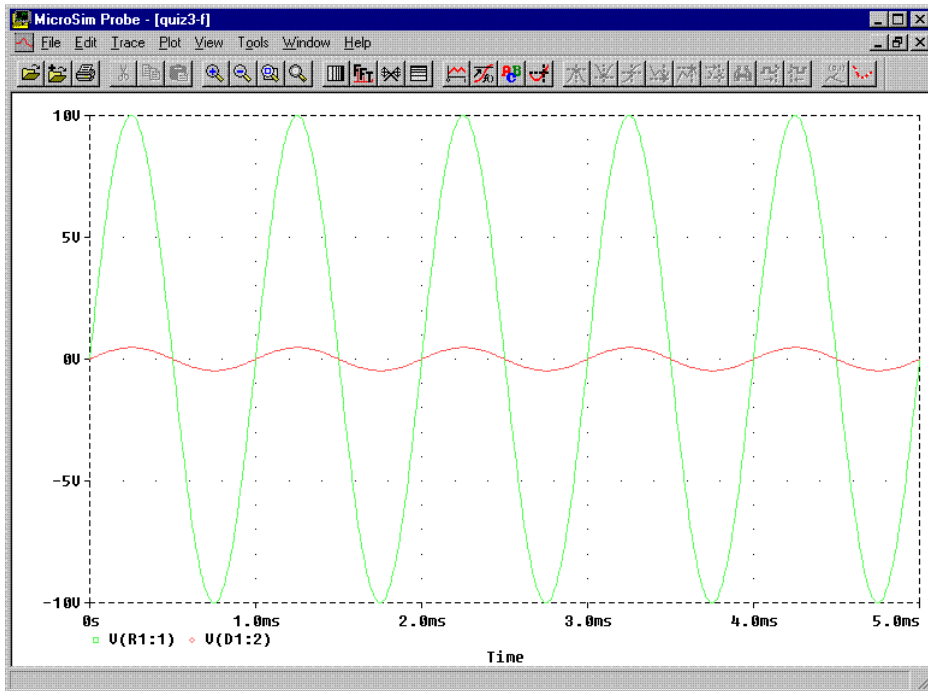
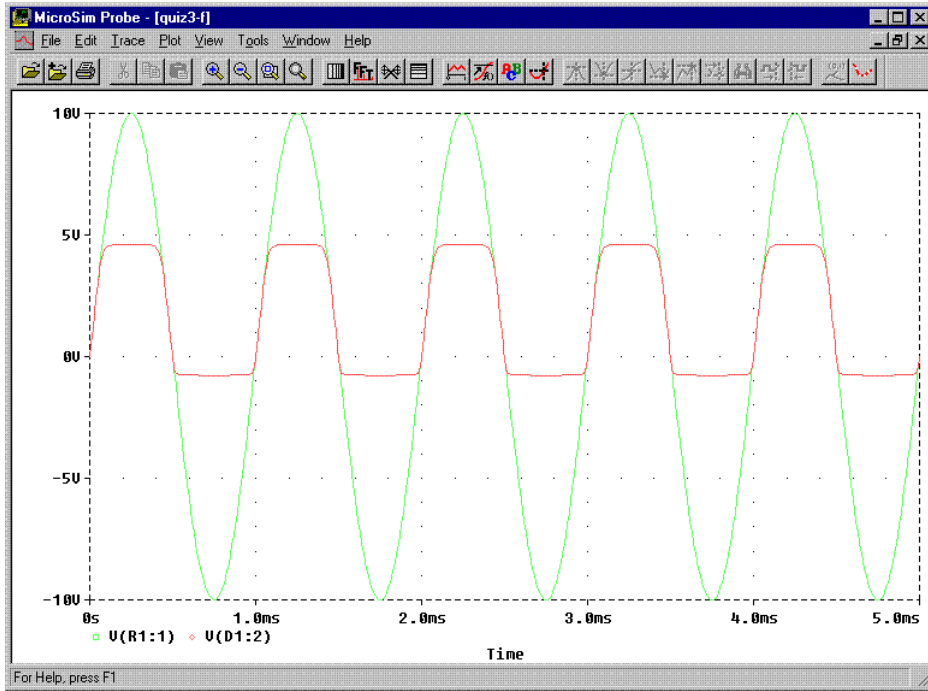


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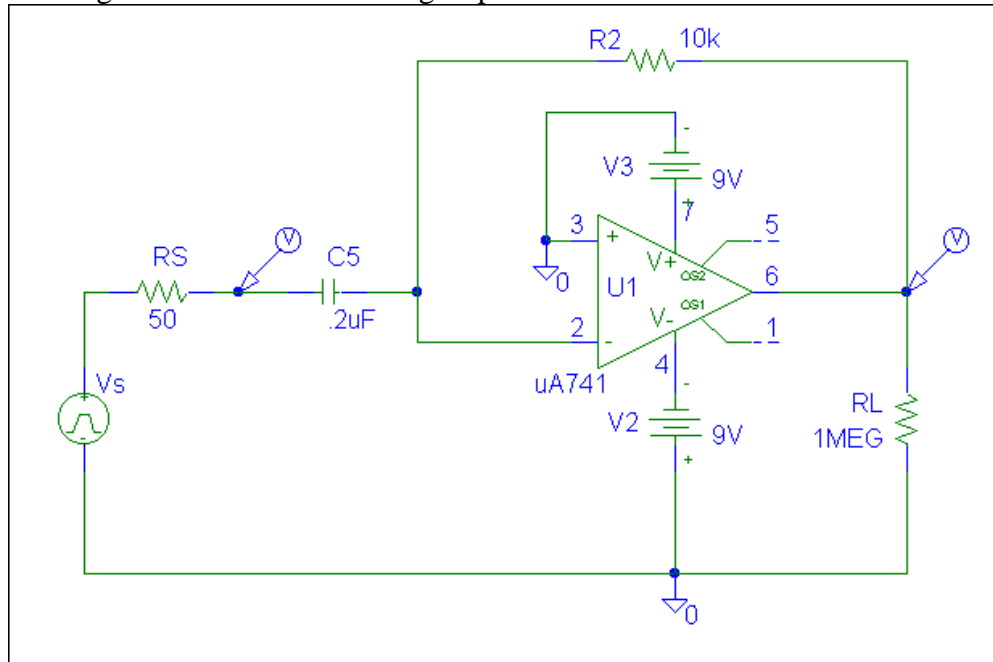
Section

Name _____

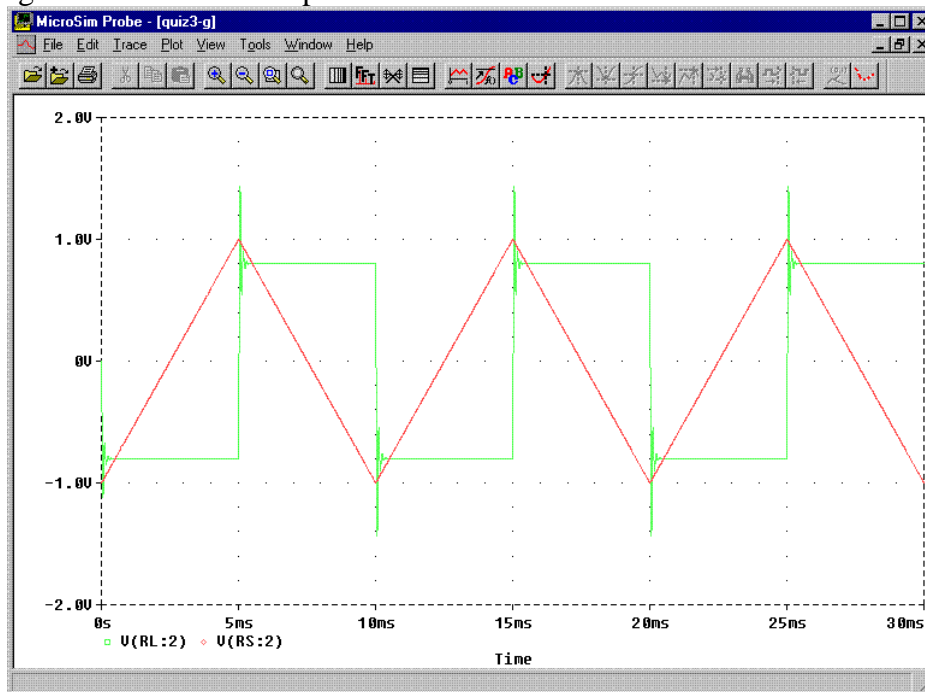


4. Op-Amp Configuration

The following circuit is simulated using PSpice.



The voltages at the two marker points are determined to be:

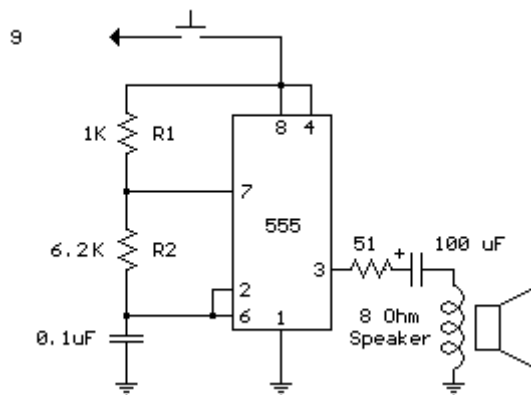
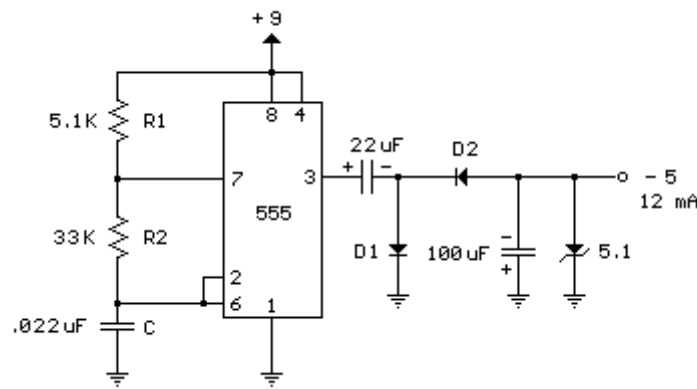
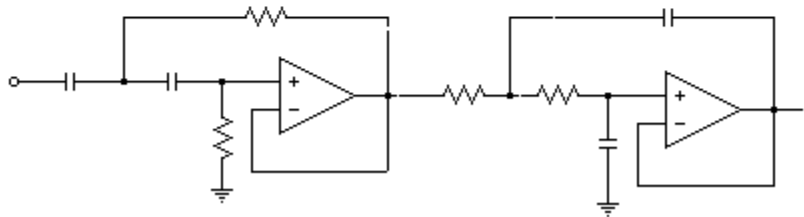
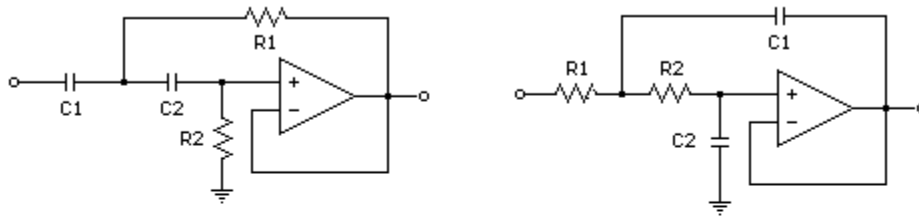


What kind of op-amp configuration is this circuit?

What relationship is supposed to exist between the two voltages that are plotted?

Show, using the information in the plot, that the circuit is working reasonably correctly.

5. Circuit Functionality



Shown above are five circuits. They are a band-pass filter, a tone generator, a low-pass filter, a +9v to -5v DC converter, and a high-pass filter. Identify which is which. Explain your answer.