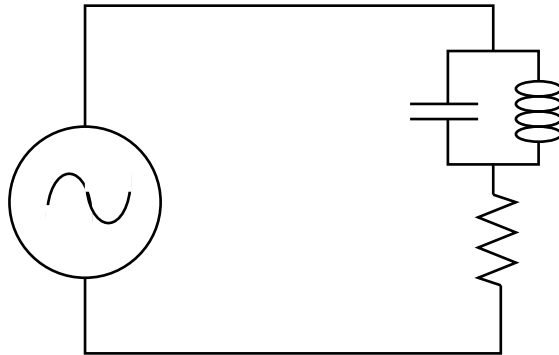


Experiment 4 Supplement

Some of you have done an experiment similar to the RLC series circuit experiment in a previous lab course. If you have, or even if you haven't, but you've gotten through the entire series RLC experiment quickly, you'll find some suggestions of other circuits to explore below. You are not required to do these experiments, but feel free if you are interested.

Parallel LC circuit

1. Try setting up the following circuit:



using the same R , L , and C values as for the series resonant case.

To begin, try measuring the amplitude and phase of V_R compared to V_0 (the voltage of the function generator).

2. Do a calculation to find an analytic expression for that ratio.
3. Fit your data to the analytic expression
4. Figure out how you can use the oscilloscope to measure the amplitude and phase of the current in the capacitor or the inductor. You will need to rearrange the circuit, and probably add some components. Again find analytic expressions for these currents, and compare the expressions to your measurements.
5. How does this circuit differ from the series case? How is it similar? What might this kind of circuit be used for?