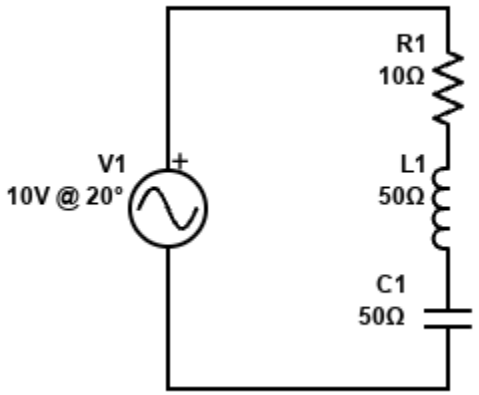
EN-3212 Electronics

Resonance

In this worksheet, we'll take a look at what happens in series and parallel RLC circuits when the condition for resonance is met.

Take a look at the series circuit shown below. What do you notice about the capacitive reactance and the inductive reactance?

Now, analyze the circuit. Be sure to pay attention to a few things as you go through this; The total equivalent impedance, the phase of the total current, the magnitude of the voltage drop across each element, and the phase of the voltage across each element.



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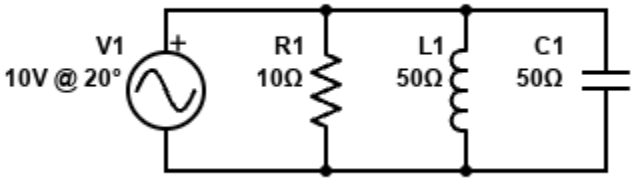
Again, analyze the circuit. Be sure to pay attention to a few things as you go through this; The total equivalent impedance, the phase of the total current, the magnitude of the current through each element, and the phase of the current through each element.



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Your results don’t seem like they can be correct, but they are. I want you to think about the voltage values you calculated for the series circuit and the current values that you calculated for the parallel circuit and see if you can explain what’s happening.