EENG-382
Engineering Circuit Analysis (Circuits II)
Spring 2014

Handwritten Homework #2 (HW02)

Problem #1
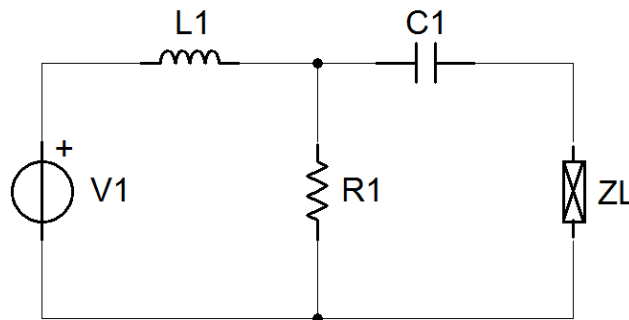
In the above circuit, the voltage source V_1 is $75V_{eff}$ at a frequency of 400Hz. The other circuit components are R1=820Ω, L1=33mH, and C_1=470nF.

a) What value of ZL will result in maximum average power delivered to it?

b) What will the complex power delivered to the load in part (a) be?

c) What percentage of the real power delivered by the source will be absorbed by the load?

d) If the load is to be constructed using just two components from the list of components in Appendix H, draw a circuit for ZL that will absorb the maximum power.

e) What fraction of the maximum average power that could potentially be delivered to the load will be delivered to the circuit in part (d)?