1. Build a series RLC network shown below in Figure 1. Set the value of C to \(0.01\mu\text{f}\) and \(L = 20\ \text{mH}\). The inductor has a \(23\Omega\) internal resistance shown as \(R_1\) in the figure. Choose \(R_2\) to be \(100\Omega\) and compare the input voltage to that across the capacitor. Repeat with \(R_2 = 20\text{K}\).

![Series RLC Circuit Diagram](image)

**Figure 1**
A series RLC circuit.

2. Calculate the value of \(R_2\) to make the system critically damped and verify this on the oscilloscope.

3. Simulate the results you obtained in parts 1 and 2 using LTSpice. Print copies of your simulated oscilloscope result for each resistor value.