1. Suppose you create the circuit shown in Fig. VI-1 with a 0.01 $\mu$F capacitor, a 200 mH inductor, and a 1 kilo-ohm resistor in series.
   a. What is the expected resonant frequency $f_0$ (in Hz) of this circuit?
   b. What is the expected quality factor of the circuit?

2. Suppose that this circuit is excited with a sinusoidal signal of amplitude $V_0 = 1$ V at a frequency $f$ that is on resonance, $f = f_0$. What is the amplitude of the voltage appearing on the inductor? (Assume that $R_R = R$.)