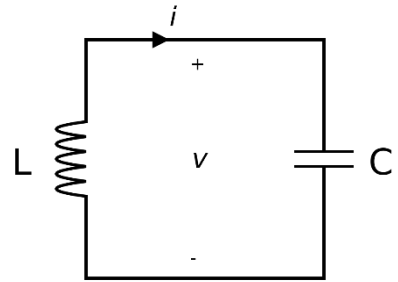


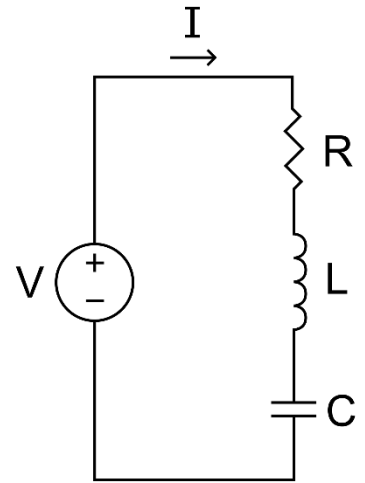
Discussion Week 10 Question 1

Lt. Commander La Forge is installing an 100mH inductor into an oscillating LC circuit in the warp core. If the maximum charge on the 5 F capacitor in the circuit is 25mC after the inductor is installed, what is the energy in the circuit and the maximum current?



Discussion Week 10 Question 2

On an away mission, Data comes across an archaeological find of a huge single loop circuit that was used in the center of a lost civilization. Using his tricorder, Data determines the material of the resistor component resulted in a resistance of 10 ohms and that the capacitor had a capacitance of 300mF. Data deduces that the inductor was 100H. What would the charge on the capacitor have been after 1, 10, and 100 complete cycles?



Discussion Week 10 Question 3

Also on the away mission, Ensign Ro scans an ancient arc generator that she calculates produced 50 V connected to a 100mH inductor. This circuit would have been used to produce an alternating current for the city. What was the amplitude of the alternating current if the frequency of the emf is 0.2 kHz and 50 kHz?

