Level: Hard

1. a) In the following circuit, give the equivalent resistance:
   b) What emf is required for the circuit?
   c) What is the voltage drop across each resistance?
   d) What is the current through each resistance?

2. a) Find the equivalent resistance through the upper branch of the parallel section in this DC circuit.
   (R_2 and R_3).
   b) Find the equivalent resistance in the top parallel section (R_1, R_2, R_3, R_4).
   c) What emf is needed for this circuit?
   d) Find the voltage drop across R_4.

3. a) Find the total impedance in a circuit with a 115 Ω resistor, a 1.35 x 10⁻⁶ F capacitor and a 34.5 mH inductor.
   b) What is the current in this circuit?