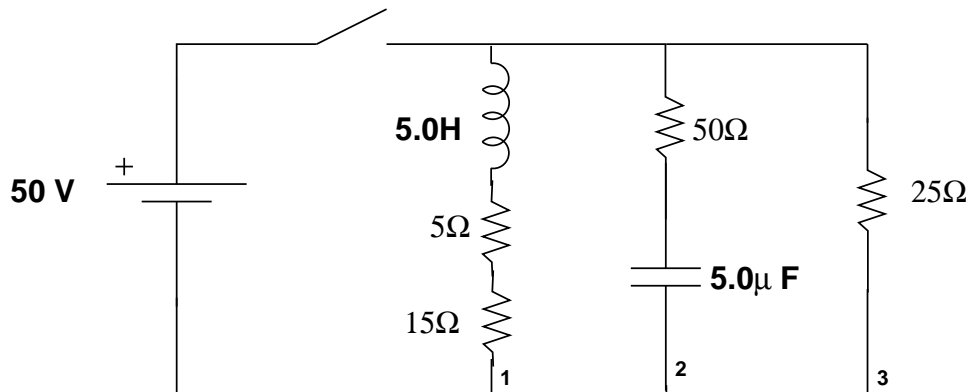


Physics 122: Practice Problem of the Day

Problem #20: Timing Circuit

Saturday, April 05 2009



A circuit is assembled as show above. The inductor has a value $L = 5.0$ henrys. The capacitor has a value of 5.0 micro-farads. The values of four resistors are shown above. The circuit is attached to a sturdy 50 volt battery as shown and then the switch is closed.

Part a) What is the current through the inductor immediately after the switch is closed? Explain how you know this.

Part b) What is the **approximate** voltage across the capacitor when measured at a time 10 seconds after the switch is closed? Explain.

Part c) What is the **approximate** current through the switch when measured at a time 0.01 seconds after the switch is closed? Explain.

Part d) What is the **exact** (to five decmals points) current through the voltage source when measured at a time 0.2 seconds after the switch is closed?