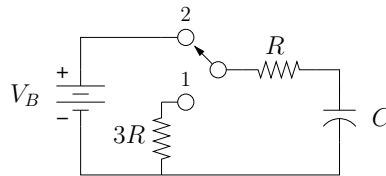


Physics 261

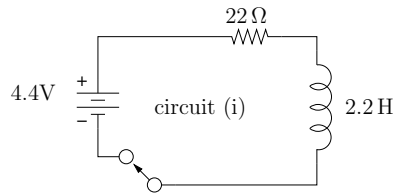
Homework # 15

Remember to show your work.

1. Faissler, problem 12-1. (I get 1 mA and 3.45 s.)
2. Faissler, problem 12-3. (I get 150 mA and 0.501 s. Either Faissler had a bad day, or maybe I did?!)
3. The switch in the circuit below begins at position 1. Since it has been sitting on the shelf for a while, the capacitor is completely discharged. At time $t = 0$, the switch is moved to position 2, then back to position 1 at $t = 3RC$. Find the capacitor voltage at $t/RC = 1, 3,$ and 5 .



4. The switch on circuit (i) is closed at $t = 0$.



- (a) Find the current at $t = 50$ ms.
- (b) At 5 s, the switch is opened. Of course, the current must then immediately go to zero. What does this imply about the voltage across the inductor?
- (c) How does circuit (ii) solve this problem?
- (d) Would the answer to part 4a differ for circuit (ii)?

