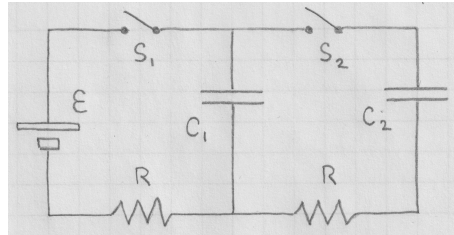


[lex57] RC circuit I at equilibrium

Consider the RC circuit shown. The battery supplies the voltage \mathcal{E} when connected to the circuit. The capacitors have capacitances C_1 and C_2 . Both resistors have resistance R . The charges on the capacitors are named Q_1 and Q_2 , respectively. Initially, both switches S_1 and S_2 are open and there is no charge on either capacitor.

- Close S_1 and wait until equilibrium is reached.
 - Then open S_1 before you close S_2 and again wait until equilibrium is reached.
 - Then close S_1 while keeping S_2 closed and wait once more until equilibrium is reached.
- Determine the charges Q_1 and Q_2 in all three equilibrium situations.



Solution: