

RC Circuit

After the switch turns to position “1”, The capacitor C is discharged through the resistor R . Charge decays exponentially, with time constant $T=RC$.

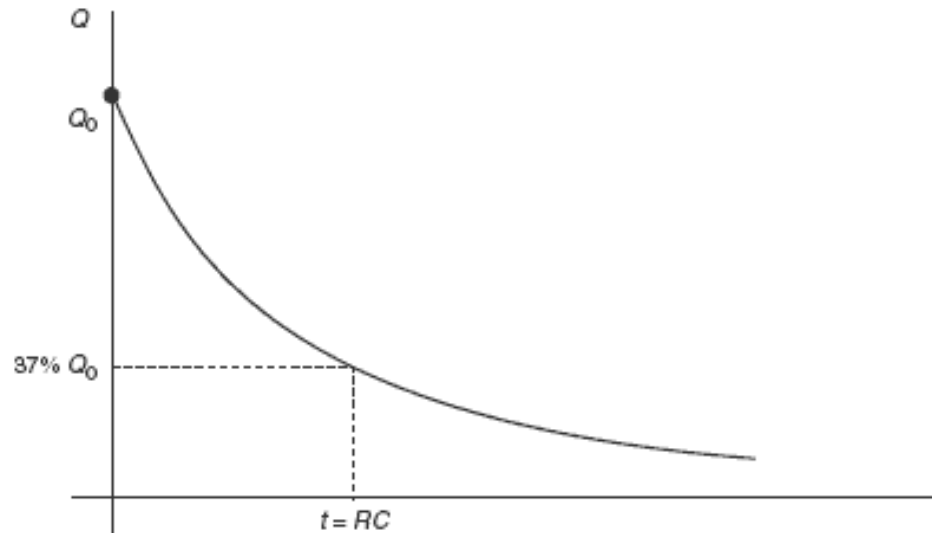
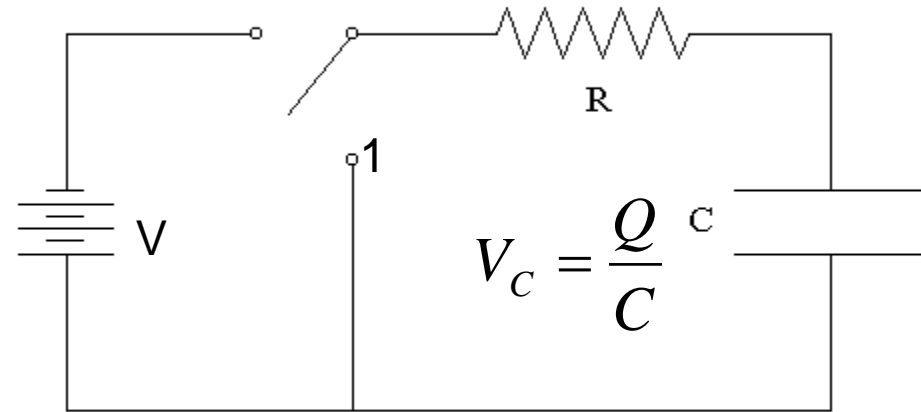


Figure 21.12 Graph of a capacitor discharging.

Homework

In the circuit below, $C_1=C_2=1\text{mF}$; $V=10\text{V}$; $R=1\text{k}\Omega$. Originally the switch is in “a’ position. C_2 is not charged.

- Find the original charge on the capacitor C_1 .
- The switch is moved to ‘b’ position. What will be the new charge on C_1 ?
- You switch between positions ‘a’ and ‘b’ multiple times. What will be the eventual charge on each of the capacitors?

