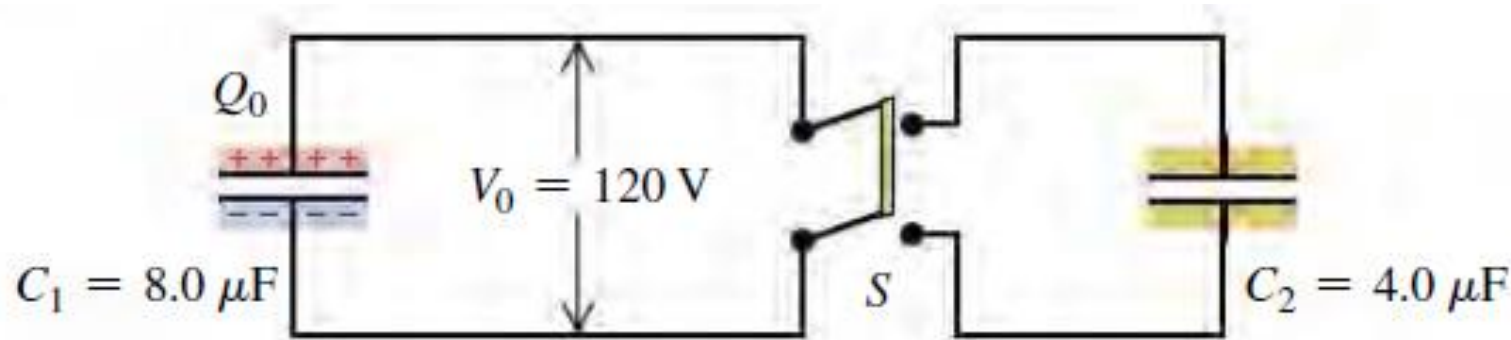


Recitation Class Mid 1 (Examples)

Teaching Assistant
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Capacitors



We connect a capacitor $C_1 = 8.0 \mu\text{F}$ to a power supply, charge it to a potential difference $V_0 = 120 \text{ V}$, and disconnect the power supply (Fig. 24.12). Switch S is open. (a) What is the charge Q_0 on C_1 ? (b) What is the energy stored in C_1 ? (c) Capacitor $C_2 = 4.0 \mu\text{F}$ is initially uncharged. We close switch S . After charge no longer flows, what is the potential difference across each capacitor, and what is the charge on each capacitor? (d) What is the final energy of the system?

*** Where did the lost energy go?

Current & Resistors

The 18-gauge copper wire has a cross-sectional area of $8.20 \times 10^{-7} \text{ m}^2$ and resistivity $1.72 \times 10^{-8} \Omega \cdot \text{m}$. It carries a current of 1.67 A.

Find (a) the electric-field magnitude in the wire; (b) the potential difference between two points in the wire 50.0 m apart; (c) the resistance of a 50.0m length of this wire.



Homework 4

- Problem 2
- Problem 4

