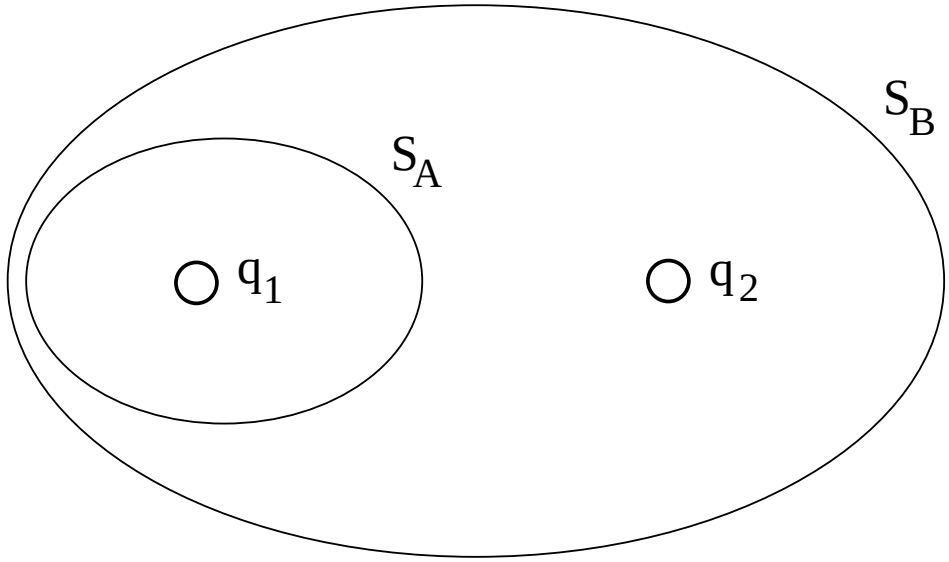
Gaussian surface problem (1)

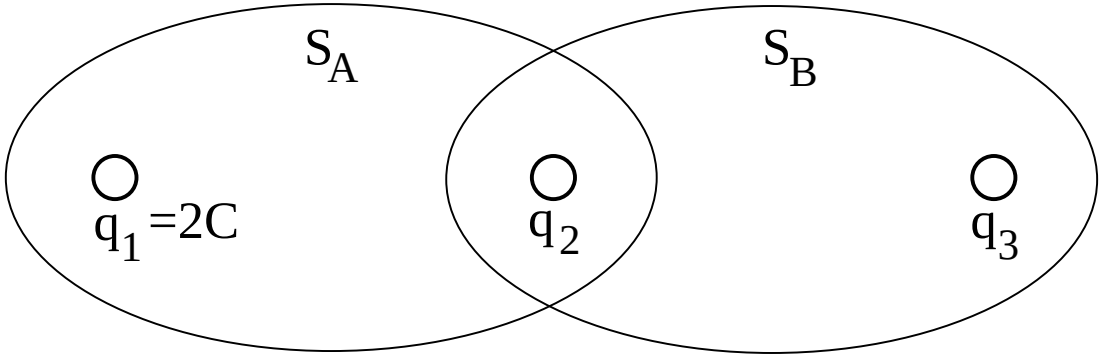
The electric fluxes through the Gaussian surfaces S_A and S_B are $\Phi_E^{(A)} = 5C/\epsilon_0$ and $\Phi_E^{(B)} = 3C/\epsilon_0$, respectively.



Find the electric charges q_1 and q_2.

Gaussian surface problem (2)

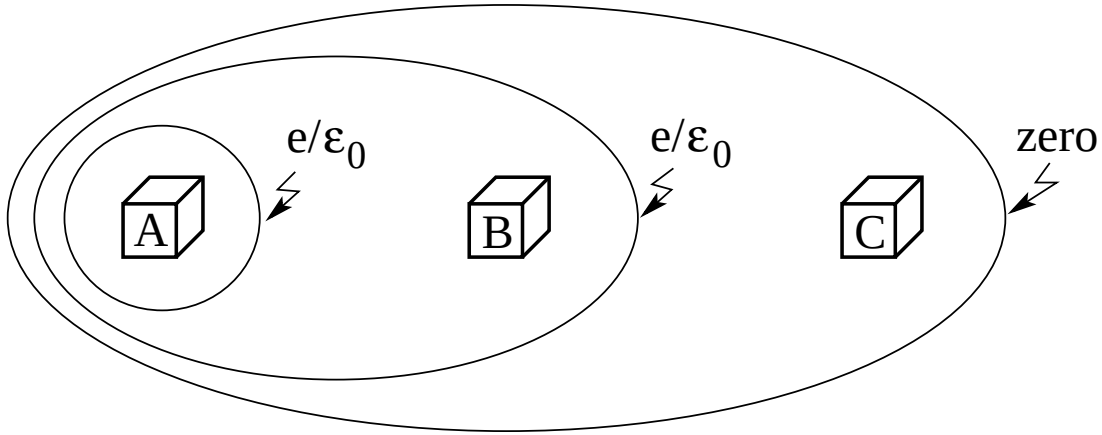
The electric fluxes through the Gaussian surfaces S_A and S_B are $\Phi_E^{(A)} = 1C/\epsilon_0$ and $\Phi_E^{(B)} = 3C/\epsilon_0$, respectively.



Find the electric charges q_2 and q_3.

Gaussian surface problem (3)

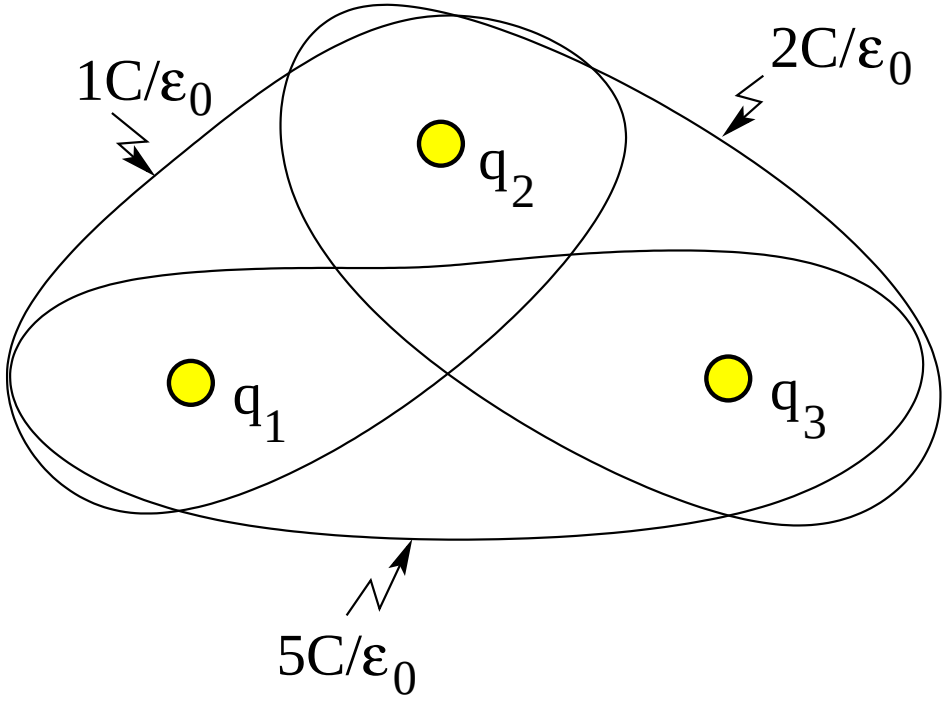
A proton, a neutron, and an electron are placed in different boxes. The electric fluxes through the three Gaussian surfaces are as indicated.



Name the particle in each box.

Gaussian surface problem (4)

Three point charges q_1, q_2, q_3 produce electric fluxes through the three Gaussian surfaces as indicated.

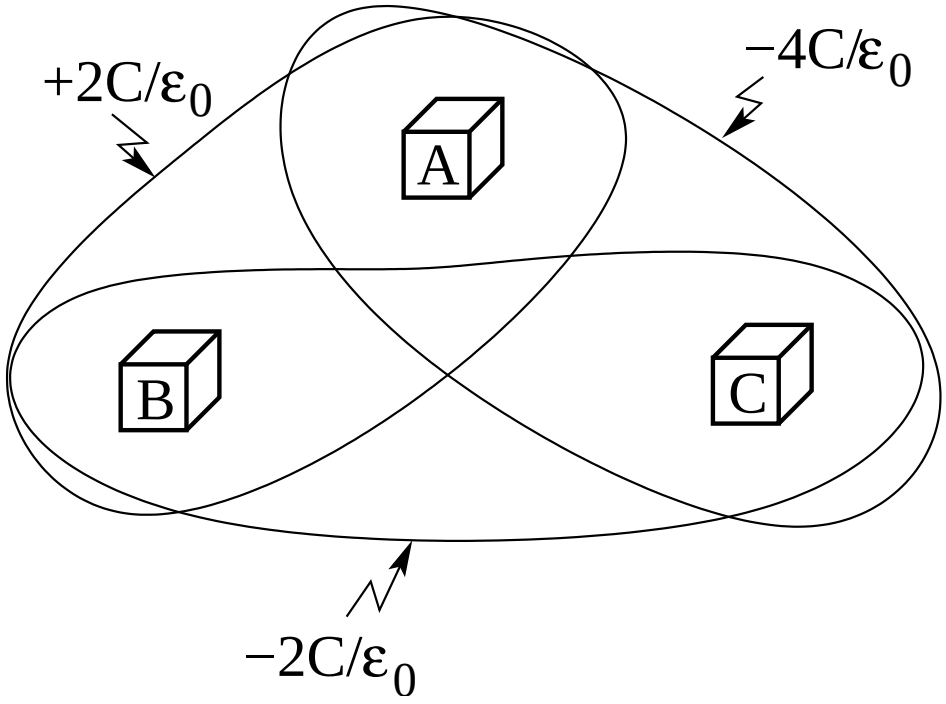


(a) Find the net charge $Q = q_1 + q_2 + q_3$.

(b) Find the individual charges q_1, q_2, q_3.

Gaussian surface problem (5)

A positive charge and a negative charge are placed in different boxes. One box remains empty. The electric fluxes through the three Gaussian surfaces are as indicated.

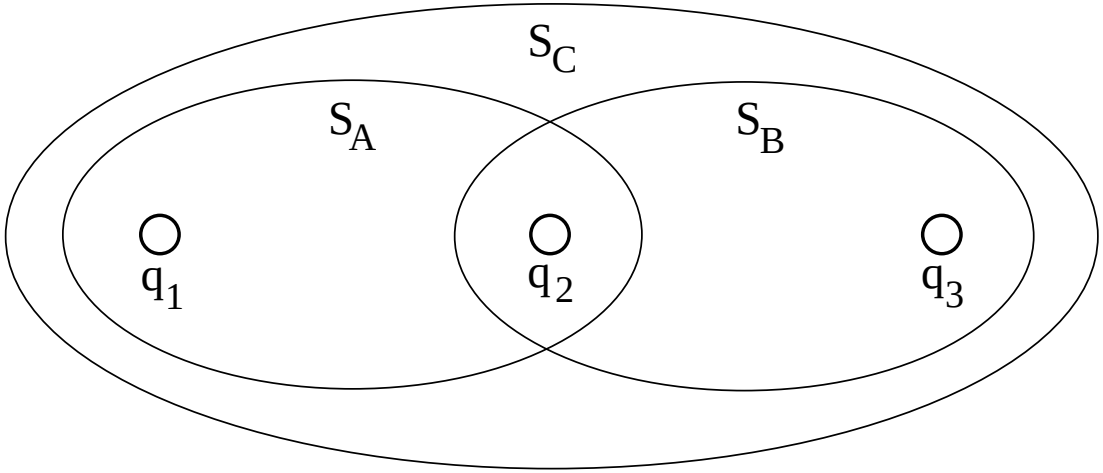


(a) Which box contains the positive charge?

(b) Which box contains the negative charge?

Gaussian surface problem (6)

The electric fluxes through the Gaussian surfaces S_A, S_B, and S_C are $\Phi_E^{(A)} = 4C/\epsilon_0$, $\Phi_E^{(B)} = 1C/\epsilon_0$, and $\Phi_E^{(C)} = 2C/\epsilon_0$, respectively.



Find the electric charges q_1, q_2, and q_3.