Chapter 24 Problems

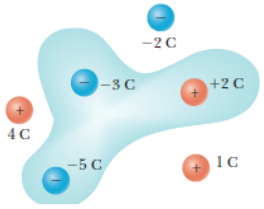
1) **Find the electric flux through the surface in the Figure**

(a) - (3 C)/ϵ

(b) (3 C)/ϵ

(c) 0

(d) - (6 C)/ϵ



2) An electron is accelerated by a constant electric field of magnitude 300 N/C.
   (a) Find the acceleration of the electron.
   (b) Use the equations of motion with constant acceleration to find the electron's speed after1.00×10^{-8} s, assuming it starts from rest.
3) A charge of -5.0 nC is at the origin and a second charge of 7.0 nC is at x = 4.00 m. Find the magnitude and direction of the electric field halfway in between the two charges.
4) Four closed surfaces, S1 through S4, together with the charges -2Q , Q , and -Q , are sketched in Figure (.The colored lines are the intersections of the surfaces wit the page.) Find the electric flux through each surface.