5. Since the magnitude of the electric field produced by a point charge q is given by $E = |q|/4\pi\varepsilon_0 r^2$, where r is the distance from the charge to the point where the field has magnitude E, the magnitude of the charge is

$$|q| = 4\pi\varepsilon_0 r^2 E = \frac{(0.50\,\mathrm{m})^2(2.0\,\mathrm{N/C})}{8.99\times10^9\,\mathrm{N\cdot m^2/C^2}} = 5.6\times10^{-11}\ \mathrm{C}\ .$$