

51. If the electric potential is zero at infinity, then the potential at the surface of the sphere is given by $V = q/4\pi\epsilon_0 r$, where q is the charge on the sphere and r is its radius. Thus

$$q = 4\pi\epsilon_0 rV = \frac{(0.15\text{ m})(1500\text{ V})}{8.99 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2} = 2.5 \times 10^{-8} \text{ C} .$$