

53. 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

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