A solid conducting sphere of radius 3 m carries a net charge of 27 C. (a) Where is the charge located? (b) What is the electric potential at the center of the sphere?

a) Charge is on outer surface

\[ V = \frac{kQ}{r} = \frac{k(27)}{3} = 9kV \]

\[ \Delta V = \int_{1}^{2} \vec{E} \cdot d\vec{s} \]

\[ = 0 \]

\[ = V(\text{center}) - V(\text{edge}) \]

\[ \Rightarrow V(\text{center}) = V(\text{edge}) = 9kV \]