An ungrounded spherical capacitor has a sphere and a concentric shell. Both are conductors. The charge on the sphere is \( +Q \). The net charge on the shell is zero.

Find the potential \( V_0 \) at the origin.

A) \( V_0 = 0 \)
B) \( V_0 = k \frac{Q}{a} \)
C) \( V_0 = k Q \left( \frac{1}{a} - \frac{1}{b} + \frac{1}{c} \right) \)

There are 3 concentric spherical charge distributions:

The superposition principle implies that at \( O \)

\[
V_O = V_a + V_b + V_c = k Q \left( \frac{1}{a} - \frac{1}{b} + \frac{1}{c} \right).
\]

Answer C.

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