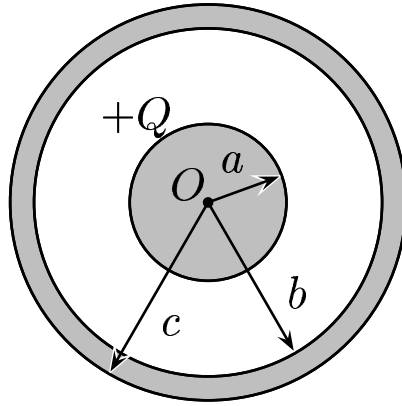


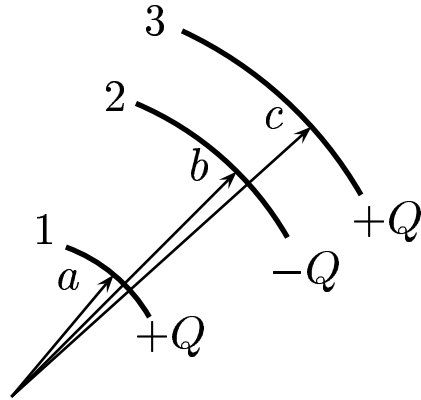
An ungrounded spherical capacitor has a sphere and a concentric shell. Both are conductors. The charge on the sphere is $+Q$. The net charge on the shell is zero.



Find the potential V_0 at the origin.

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

There are 3 concentric spherical charge distributions:



The superposition principle implies that at O

$$V_O = V_a + V_b + V_c = kQ \left(\frac{1}{a} - \frac{1}{b} + \frac{1}{c} \right) .$$

Answer **C**.

26.02-03 Potential at O of an Ungrounded System 2004-3-24