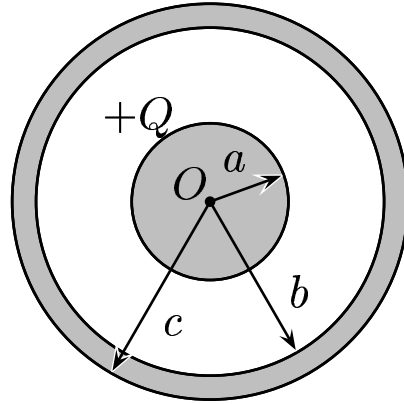


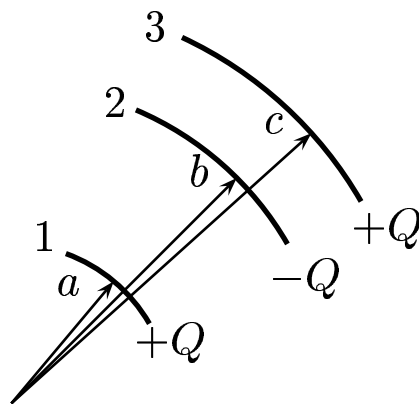
An ungrounded spherical capacitor has a sphere and a concentric shell. Both are conductors. The charge on the sphere is  $+Q$ . The net charge on the shell is zero.



Find the potential  $V_O$  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  $O$

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

Answer **C**.