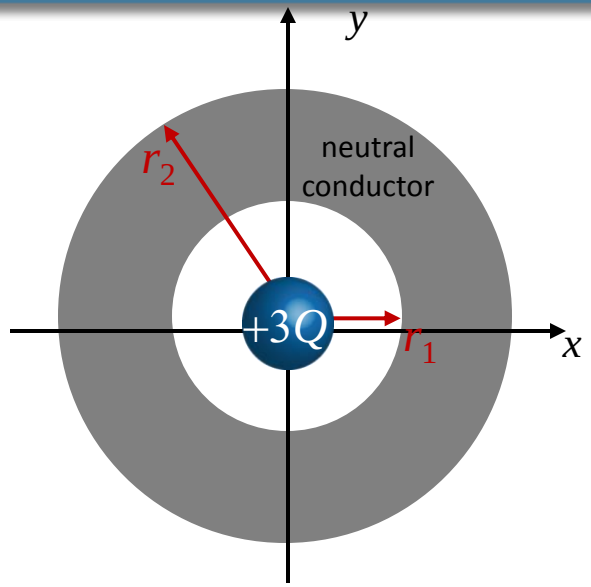
Calculation

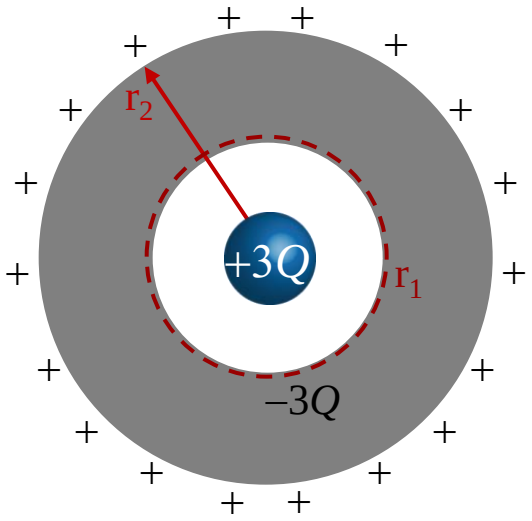


Suppose give conductor a charge of $-Q$

A) What is E everywhere?

B) What are charge distributions at r_1 and r_2?

$$\int \vec{E} \cdot d\vec{A} = \frac{Q_{enc}}{\varepsilon_0}$$



$r < r_1$

A) $E = \frac{1}{4\pi\varepsilon_0}\frac{3Q}{r^2}$

B) $E = \frac{1}{4\pi\varepsilon_0}\frac{2Q}{r^2}$

C) $E = \frac{1}{4\pi\varepsilon_0}\frac{Q}{r^2}$

$r > r_2$

A) $E = \frac{1}{4\pi\varepsilon_0}\frac{3Q}{r^2}$

B) $E = \frac{1}{4\pi\varepsilon_0}\frac{2Q}{r^2}$

C) $E = \frac{1}{4\pi\varepsilon_0}\frac{Q}{r^2}$

$r_1 < r < r_2$

$$E = 0$$