

Given $\mathbf{E} = c \mathbf{r}$,

($c = \text{constant}$, $\mathbf{r} = \text{spherical radius vector}$)

We just found $\rho(r) = 3c$.

What is the total charge Q enclosed by an imaginary sphere centered on the origin, of radius R ?

Hint: Can you find it two DIFFERENT ways?

A) $(4/3) \pi c$

B) $4 \pi c$

C) $(4/3) \pi c R^3$

D) $4 \pi c R^3$

E) None of these is correct