

55. The net enclosed charge q is given by

$$q = \varepsilon_0 \Phi = \left(8.85 \times 10^{-12} \frac{\text{C}^2}{\text{N} \cdot \text{m}^2} \right) (-48 \text{ N} \cdot \text{m}^2 / \text{C}) = -4.2 \times 10^{-10} \text{ C} .$$