

6. There is no flux through the sides, so we have two “inward” contributions to the flux, one from the top (of magnitude $(34)(3.0)^2$) and one from the bottom (of magnitude $(20)(3.0)^2$). With “inward” flux being negative, the result is $\Phi = -486 \text{ N}\cdot\text{m}^2/\text{C}$. Gauss’ law then leads to $q_{\text{enc}} = \epsilon_0 \Phi = -4.3 \times 10^{-9} \text{ C}$.