

10. 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 conventionally negative, the result is  $\Phi = -486 \text{ N}\cdot\text{m}^2/\text{C}$ . Gauss’ law, then, leads to  $q_{\text{enc}} = \epsilon_0 \Phi = -4.3 \times 10^{-9} \text{ C}$ .