

3. Charge flows until the potential difference across the capacitor is the same as the potential difference across the battery. The charge on the capacitor is then $q = CV$, and this is the same as the total charge that has passed through the battery. Thus, $q = (25 \times 10^{-6} \text{ F})(120 \text{ V}) = 3.0 \times 10^{-3} \text{ C}$.