

9. The potential difference can be calculated by dividing the work done by the size of the charge.

$$\Delta V = W / q$$

Multiplying both sides of the equation by the size of the charge allows us to calculate the work done.

$$W = (\Delta V) q$$

$$W = (80 \text{ V}) (3.0 \times 10^{-6} \text{ C})$$

$$W = 240 \times 10^{-6} \text{ V C} = 2.4 \times 10^{-4} \text{ J because } 1 \text{ J} = (1 \text{ V}) (1\text{C})$$