

10. 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.

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

$$W = (70 \text{ V}) (- 4.0 \times 10^{-6} \text{ C})$$

$$W = - 280 \times 10^{-6} \text{ V C} = - 2.80 \times 10^{-4} \text{ J}$$

Note that the work has a negative sign, because the sign on the charge was negative.