

Solutions

Each answer shows the steps, then the **result**.

2.1

- $V = k \frac{q}{r} = 8.99 \times 10^9 \times \frac{6.0 \times 10^{-6}}{0.30} = 1.8 \times 10^5 \text{ V}$

2.2

- a scalar

2.3

- $W = q \Delta V = 2.0 \times 10^{-6} \times 100 = 2.0 \times 10^{-4} \text{ J}$

3.1 A

3.2 B

3.3

(a)

- $V = 8.99 \times 10^9 \times \frac{3.0 \times 10^{-6}}{0.20} = 1.35 \times 10^5 \text{ V}$

(b)

- $U = qV = (1.0 \times 10^{-6})(1.35 \times 10^5) = 0.135 \text{ J}$