

**31** A positive charge of  $2.6 \times 10^{-8}$  C is in an electric field of constant field strength  $300\,000\,\text{Vm}^{-1}$ .

How much work must be done on the charge in order to move it a distance of 4.0 mm in the opposite direction to the direction of the field?

**A**  $3.1 \times 10^{-5}\,\text{J}$

**B**  $2.0 \times 10^{-3}\,\text{J}$

**C**  $3.1 \times 10^{-2}\,\text{J}$

**D**  $2.0\,\text{J}$

**Space for working**