

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

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 J

Space for working