29 The electric field at a certain distance from an isolated alpha particle is $3.0 \times 10^{7}\,\text{N C}^{-1}$.

What is the force on an electron when at that distance from the alpha particle?

A $4.8 \times 10^{-12}\,\text{N}$

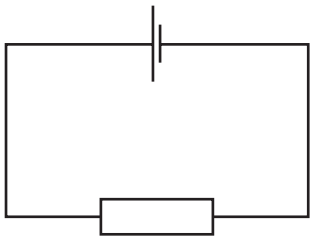
B $9.6 \times 10^{-12}\,\text{N}$

C $3.0 \times 10^{7}\,\text{N}$

D $6.0 \times 10^{7}\,\text{N}$

30 A cell is connected to a resistor.

At any given moment, the potential difference across the cell is less than its electromotive force.



Which statement explains this?

A The cell is continually discharging.

B The connecting wire has some resistance.

C Energy is needed to drive charge through the cell.

D Power is used when there is a current in the resistor.

Space for working