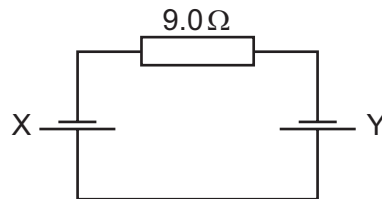


**31** Two cells X and Y are connected in series with a resistor of resistance  $9.0\Omega$ , as shown.



Cell X has an electromotive force (e.m.f.) of  $1.0\text{V}$  and an internal resistance of  $1.0\Omega$ . Cell Y has an e.m.f. of  $2.0\text{V}$  and an internal resistance of  $2.0\Omega$ .

What is the current in the circuit?

**A**  $0.25\text{A}$

**B**  $0.17\text{A}$

**C**  $0.10\text{A}$

**D**  $0.083\text{A}$

**Space for working**