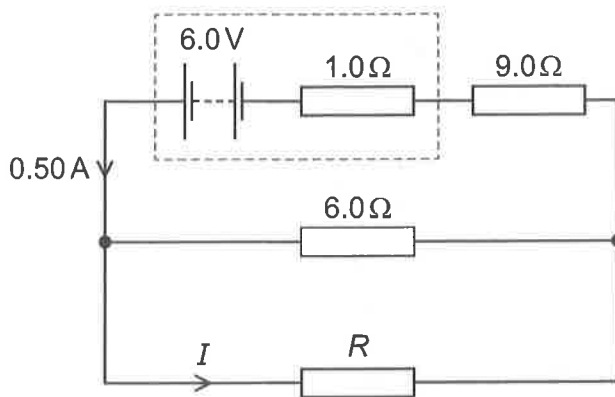


- 23** A battery of e.m.f.  $6.0\text{ V}$  and internal resistance  $1.0\ \Omega$  is connected in series to a  $9.0\ \Omega$  resistor and a parallel combination of resistors of resistance  $6.0\ \Omega$  and  $R$ . The battery delivers a current of  $0.50\text{ A}$  to the circuit.



What are the values of the unknown current  $I$  and the resistance  $R$ , as shown in the diagram?

	$I/\text{A}$	$R/\Omega$
<b>A</b>	0.17	9.0
<b>B</b>	0.25	4.0
<b>C</b>	0.25	6.0
<b>D</b>	0.33	3.0

- 24** A coil has core, coil of side  $20\text{ mm}$  has  $50$  turns. It hangs vertically so that it can rotate freely about