7 **(a)** Fig. 7.1 shows two resistors connected in series with a cell of electromotive force (e.m.f.) 1.50 V and internal resistance $0.28\,\Omega$.

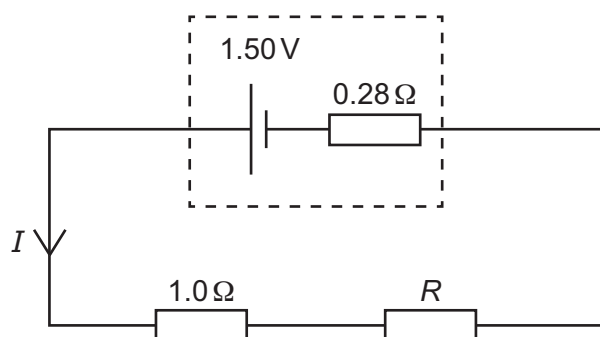
Fig. 7.1

One of the resistors has resistance $1.0\,\Omega$. The other resistor has resistance R.
The terminal potential difference (p.d.) across the cell is 1.36 V.

(i) Show that the current I in the circuit is 0.50 A.

[2]

(ii) Calculate the combined resistance of the two resistors.

resistance = ... Ω [2]

(iii) Use your answer in **(a)(ii)** to determine resistance R.

R = ... Ω [1]

(b) The circuit in Fig. 7.1 is disconnected and the two resistors are reconnected to the cell, now in parallel with each other.

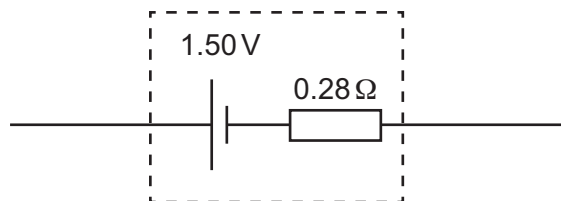   **(i)** On Fig. 7.2, complete the circuit diagram to show this arrangement.

Fig. 7.2

[1]

    (ii) Explain, without calculation, whether the terminal p.d. across the cell is now less than, equal to or greater than 1.36 V.

....

....

.... [2]

[Total: 8]