

- 6 A washing machine has an electric motor and an electric heater.



The resistance of the heater is  $22\ \Omega$ .

The mains voltage is  $230\text{ V}$ .

- (a) (i) State the equation linking voltage, current and resistance.

(1)

- (ii) Show that the current in the heater is about  $10\text{ A}$  when it is working.

(2)



(b) The washing machine is fitted with a fuse rated at 13 A.

(i) Explain why the washing machine is fitted with a fuse.

(2)

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(ii) When the motor is working, the current in it is 1.74 A.

Explain why it would **not** be sensible to replace the 13 A fuse with a 2 A fuse.

(2)

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**(Total for Question 6 = 7 marks)**

