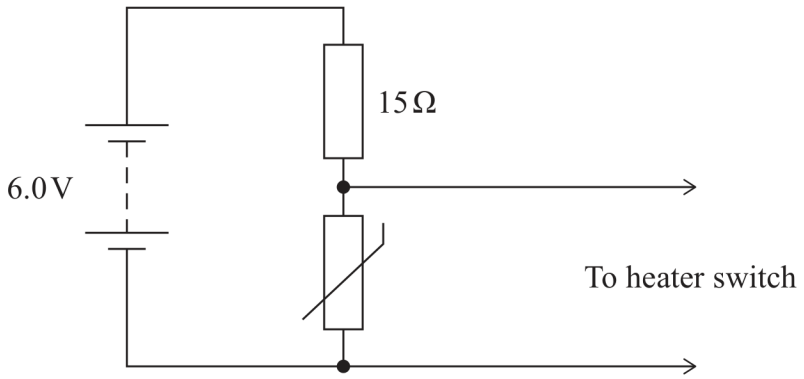
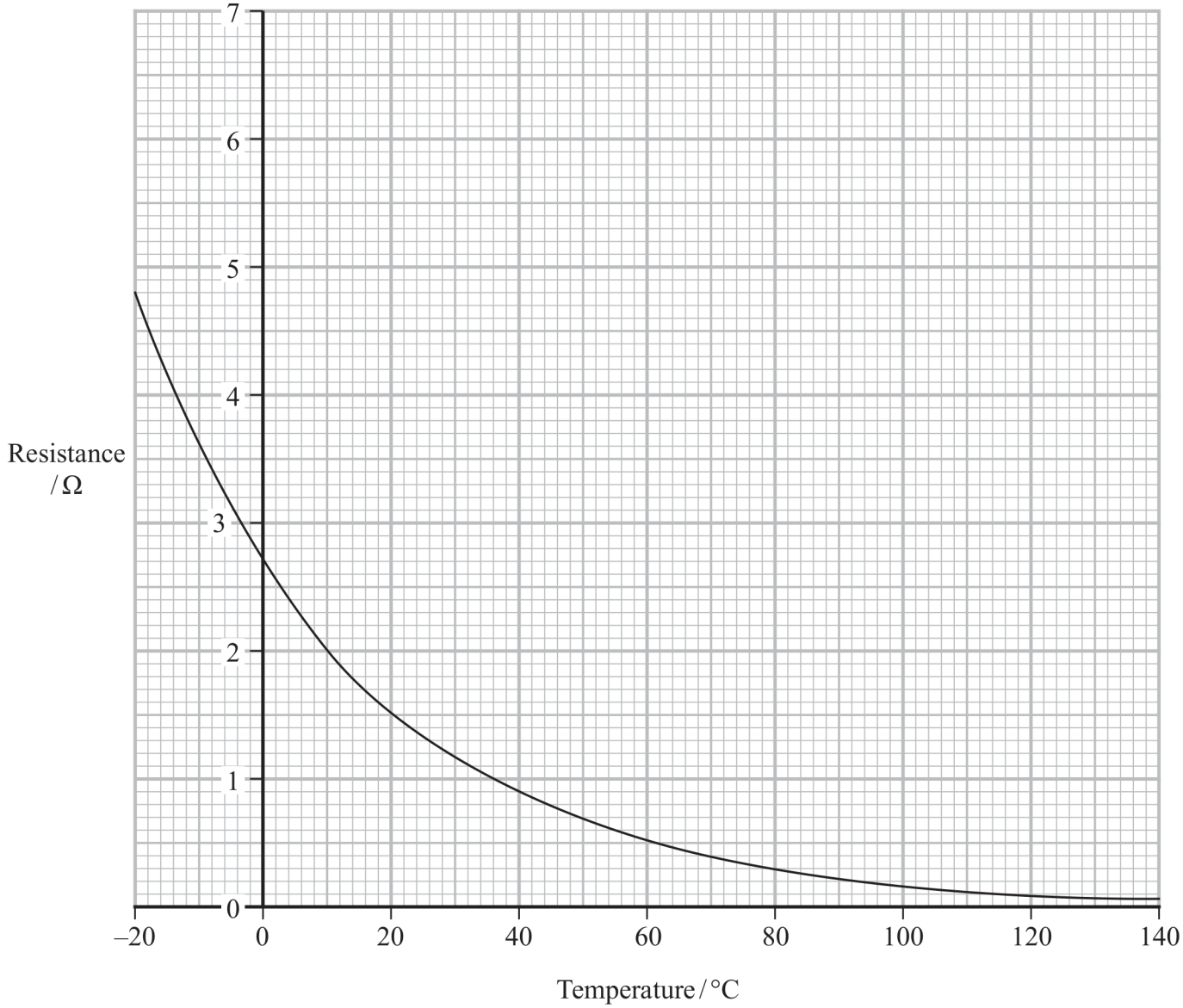
14 A temperature-sensing circuit consists of a fixed resistor and a thermistor, as shown.



The circuit supplies a potential difference (p.d.) to operate the heater switch.

The heater switches on when the p.d. across the thermistor is greater than 0.7 V.

The resistance of the thermistor varies with temperature as shown on the graph.



(a) Deduce whether this circuit would switch on the heater when the temperature falls below 10 °C.

You should include a calculation of the p.d. across the thermistor when the temperature is 10 °C.

(6)

(b) Explain why the resistance of the thermistor changes with temperature.

(2)

(Total for Question 14 = 8 marks)