3 This question is about solids, liquids and gases.

(a) Melting is the process that occurs when a solid changes into a liquid.

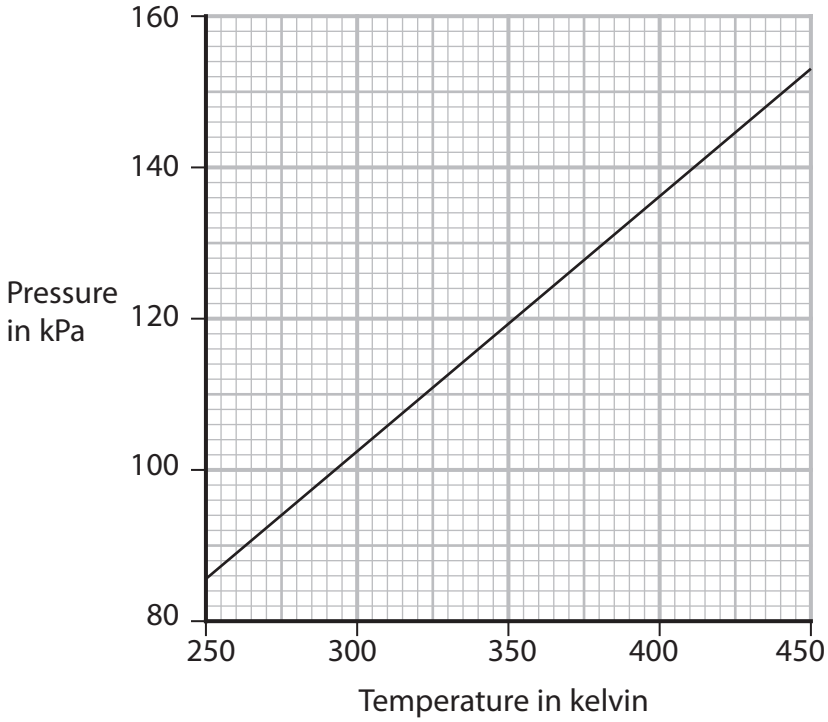
Using ideas about particles, describe the process of melting.

(2)

(b) A sealed metal flask contains air at room temperature.

The flask is then heated.

The graph shows how the pressure of the air increases as its temperature increases.



(i) Explain how heating the flask increases the temperature of the air inside the flask.

(2)

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(ii) Explain why the pressure of the air increases as its temperature increases.

(2)

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(iii) Using the graph, determine the pressure of the air when its temperature is 400 K.

(1)

pressure = ... kPa

(iv) The air in the flask is now cooled to a temperature of 230 K.

Calculate the new pressure of the air.

(3)

pressure = ... kPa

(Total for Question 3 = 10 marks)