

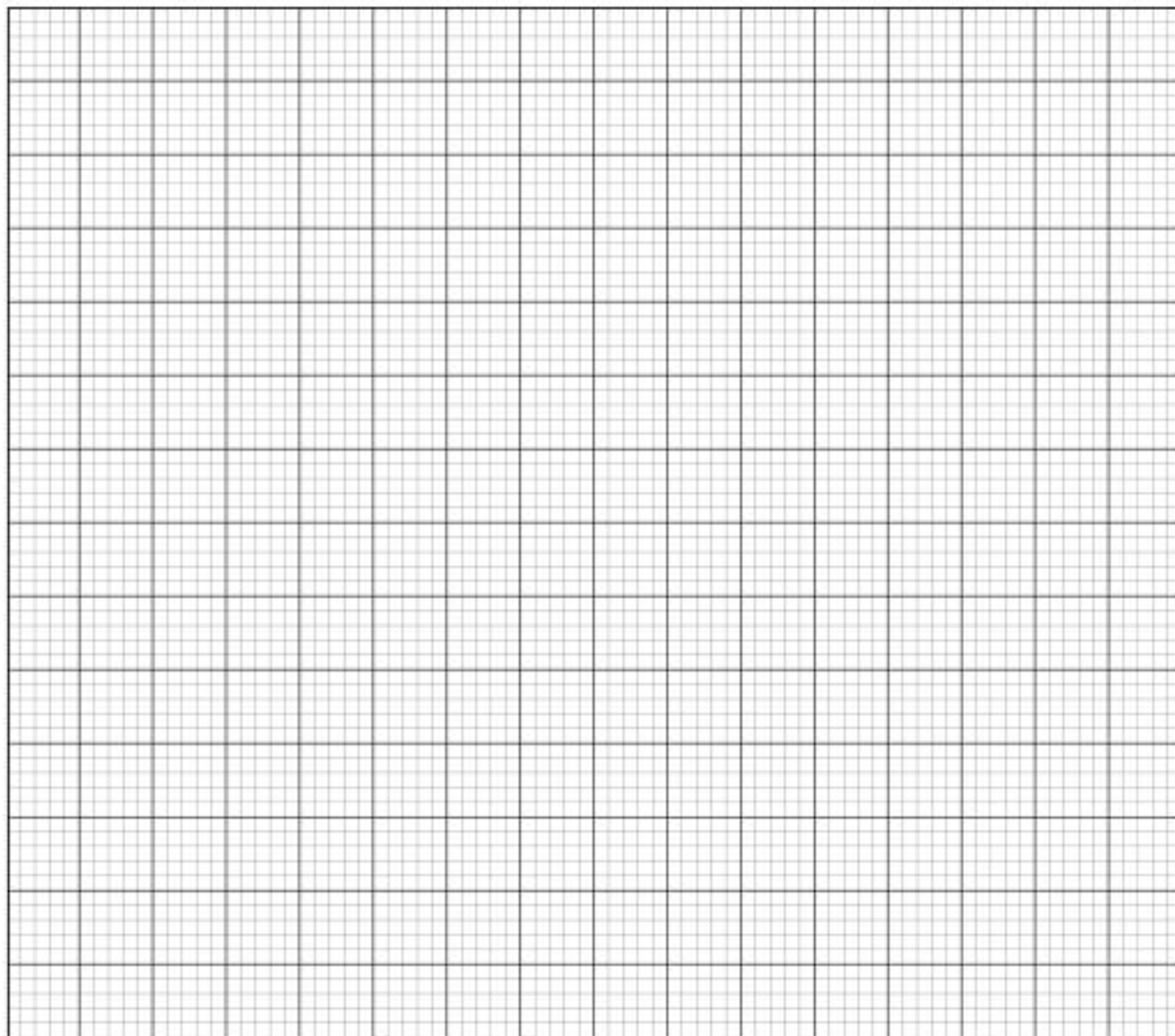
**Question 27****(12 marks)**

The information in the table below shows the boiling temperature for a range of primary amines.

<b>Amine</b>	<b>Boiling temperature (°C)</b>
Ethanamine	16.6
Propan-1-amine	47.8
Butan-1-amine	78.0
Hexan-1-amine	131
Heptan-1-amine	155

- (a) Draw the structure of butan-1-amine showing all atoms and bonds. (2 marks)

- (b) Use the data in the table on the previous page to graph the boiling temperature of amines versus the number of carbons in the amines on the grid below. The x-axis has been labelled for you. (5 marks)



(c) Use your graph to predict the boiling temperature of pentan-1-amine.

(1 mark)

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- (d) Use your understanding of intermolecular forces to explain the relationship shown in your graph. (4 marks)

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