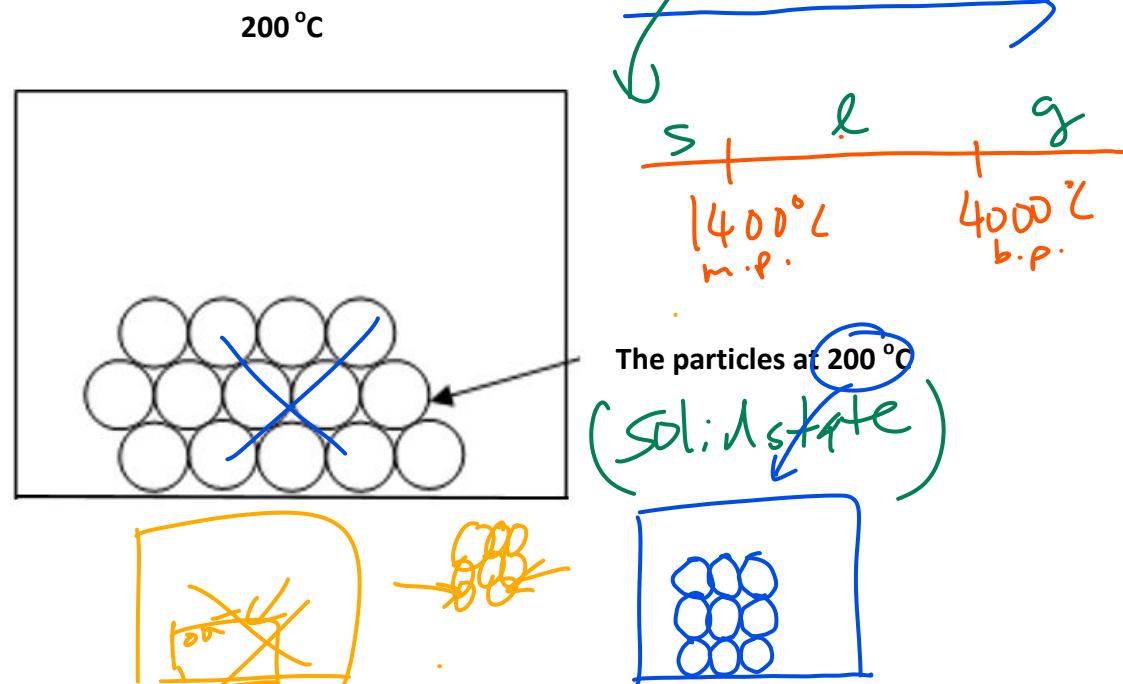




- 2 **Fig. 3.1** shows the arrangement of particles of a substance at 200°C . The substance melts at 1400°C and boils at 4000°C .



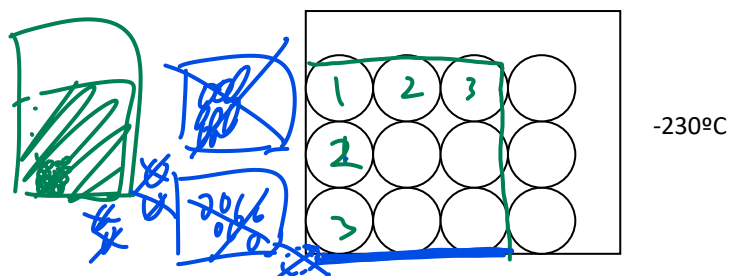
Draw in the boxes below the arrangements of particles for this substance at the given temperature. [2]

Fig. 3.1

2	400°C 	1531°C 	1 each Max 2
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- 4) The diagram shows the arrangement of atoms within a certain element **Y** at -230°C .
The element melts at -219°C and boils at -183°C .



- (a) Draw in the following boxes the arrangement of atoms of the given temperature. [2]

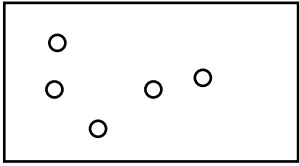
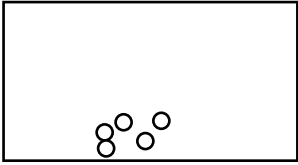


-177°C



-190°C

- (b) Describe and explain what happen to the **motion** and **arrangement** of particles when element **Y** changes from -177°C to -220°C . [3]

4	(a)	 <p>-177°C</p>  <p>-190°C</p>	[2]
	(b)	<ul style="list-style-type: none"> •At -177°C, the Y particles are in random motion with negligible forces of attraction between the particles. (1m) •At -183°C, the particles lose some energy and become closer together and become more regularly arranged. Y particles slide over one another. Y element is now a liquid. (1m) •At -220°C, the particles move even closer and lose more energy to become regularly arranged. The particles vibrate at its fixed position. Element Y becomes a solid.(1m) 	[3]