Question number	Answer	Notes	Marks
3 (a)	(some) bonds (between particles) are broken or weakened; particles begin to move around or slide over each other;	award either or both marks if clear from diagram accept idea of reduction in intermolecular forces reject MP2 if there is a reference to the speed of particles or KE changing during melting	2
(b) (i)	any two from: MP1. energy is transferred to air/particles (by heating); MP2. idea that particles move faster; MP3. temperature (in K) is (directly) proportional to KE of particles;	 accept molecules for particles accept particles gain KE	2
(ii)	particles hit (flask) walls **more frequently**; particles hit (flask) walls with more force / harder;		2
(iii)	136 (kPa);	allow answers in the range 135-137 (kPa)	1
(iv)	substitution; rearrangement; evaluation; e.g. $136 / 400 = p_2 / 230$ $(p_2 =) (136 \times 230) / 400$ $(p_2 =) 78$ (kPa)	allow ecf from (b)(iii) e.g. 86 (kPa) for (iii) gives 79 (kPa) for (iv) substitution and rearrangement in either order allow 78.2… accept extrapolation back to T = 230 for 2 marks accept value between 79 and 77 by this method accept calculation using graph (i.e. extrapolation numerically/algebraically) back to 230 for 2 marks accept value between 79 and 77 by this method	3

Total for question 3 = 10 marks