Question Number	Answer		Mark
12	Energy transferred from hot liquid = energy transferred to ice + energy transferred to cold water	(1)	
	[This may be implicit]		
	Use of $E = mc\Delta\theta$	(1)	
	Use of $E = mL$	(1)	
	Mass of ice required to cool drink to 58 °C is 2.4×10^{-2} kg **Or** Final temperature using 4 g of ice is 69 °C	(1)	
	Valid conclusion based on a consideration of their calculated value in comparison with a corresponding value in the question.	(1)	**5**
	Example of calculation		
	Energy transferred from hot liquid = energy transferred to ice + energy transferred to cold water		
	$0.275\ \text{kg} \times 3750\ \text{J kg}^{-1}\text{K}^{-1} \times (71.5 - 58.0)\text{K}$ $= \text{m} \times 3.34 \times 10^5\ \text{J kg}^{-1} + \text{m} \times 4190\ \text{J kg}^{-1}\text{K}^{-1} \times (58.0 - 0)\text{K}$		
	$\therefore 1.39 \times 10^4\text{J} = \text{m} \times (3.34 \times 10^5 + 2.43 \times 10^5)\ \text{J kg}^{-1}$		
	$\therefore m = \frac{1.39 \times 10^4\ \text{J}}{5.77 \times 10^5\ \text{J kg}^{-1}} = 2.41 \times 10^{-2}$ kg = 24 g So 4 g would not bring the temperature below the ideal serving temperature.		
	Total for question 12		**5**