

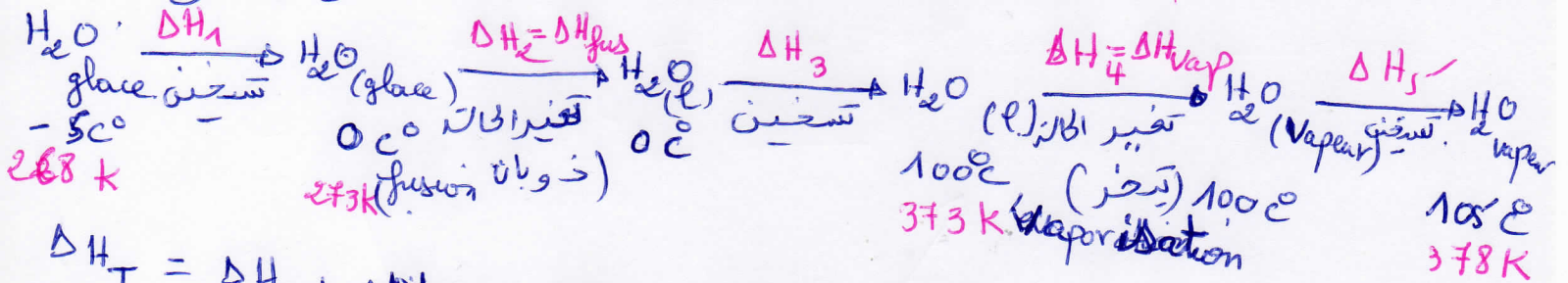
$$\Delta H_R = -151,9 - 151,9 - 15,58$$

تسعة

$$\Delta H_R^\circ = -235,8 \text{ Kcal/mol}$$

حساب قيمة الأثر الحراري ΔH الخاصة بتسخين 1 مول من الجليد من -5°C إلى 105°C .

لتبسيط على المخطط مختلف المراحل التي يمر بها الماء لكي يتحول



$$\Delta H_T = \Delta H_1 + \Delta H_{\text{fus}} + \Delta H_3 + \Delta H_{\text{vap}} + \Delta H_5$$

$$\Delta H_1 = \int_{268}^{273} n C_p dT = n C_p (273 - 268) = 1 \times 37,7 (273 - 268) \quad n = 1 \text{ mole}$$

$$\Delta H_1 = 188,5 \text{ J/mol}$$

$$\Delta H_2 = \Delta H_{\text{fus}} = 1,436 \text{ Kcal/mol} = 1436 \text{ cal/mol}$$

$$\Delta H_2 = 6002,48 \text{ J/mol}$$

$$1 \text{ cal} = 4,18 \text{ J}$$

$$\Delta H_3 = \int_{273}^{373} n C_p dT = n C_p (373 - 273) = 1 \times 75,3 (373 - 273)$$

$$\Delta H_3 = 7530 \text{ J/mol}$$

$$\Delta H_4 = \Delta H_{\text{vap}} = 9,717 \text{ Kcal/mol} = 9717 \text{ cal/mol}$$

$$\Delta H_4 = 40617,06 \text{ J/mol}$$

$$\Delta H_5 = \int_{373}^{378} n C_p dT = n C_p (378 - 373) = 1 \times 37,7 (378 - 373)$$

$$\Delta H_5 = 188,5 \text{ J/mol}$$

$$\Delta H_T = 54,526 \text{ KJ/mole}$$