•	Anhydrous copper(II) sulfate is a white powder that reacts with water to give the
	familiar light blue crystals of copper(II) sulfate-5-water.

Marks

$$CuSO_4(s) \ + \ 5H_2O(l) \ \rightarrow \ CuSO_4 \cdot 5H_2O(s)$$

Calculate the standard enthalpy change for this reaction from the heats of solution.

Compound	$\Delta H^{\circ}_{\text{solution}} / \text{kJ mol}^{-1}$	
CuSO <sub>4</sub> (s)	-66.5	
CuSO <sub>4</sub> ·5H <sub>2</sub> O(s)	+11.7	

Λ	ns	'XX	ρr	•
$\boldsymbol{\Gamma}$	115	) VV	C1	ı,

• Using the given data, calculate  $\Delta H^{\circ}$  for the reaction:  $H(g) + Br(g) \rightarrow HBr(g)$ 

 $H_2(g) \rightarrow 2H(g)$ Data:

$$\Delta H^{\circ} = +436 \text{ kJ mol}^{-1}$$

$$Br_2(g) \rightarrow 2Br(g)$$

$$\Delta H^{\circ} = +193 \text{ kJ mol}^{-1}$$

$$H_2(g) + Br_2(g) \rightarrow 2HBr(g)$$

$$\Delta H^{\circ} = -72 \text{ kJ mol}^{-1}$$

Answer:

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