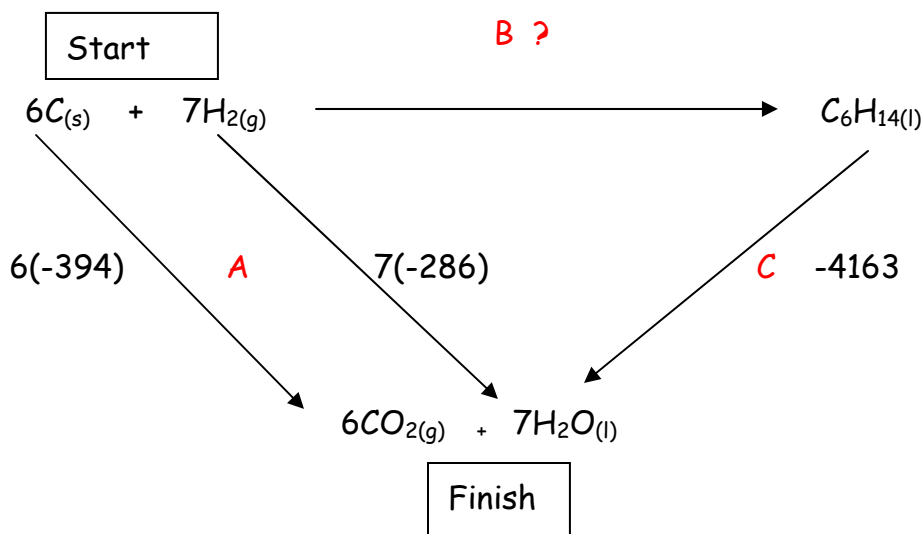


Hess's Law Calculations

1. Write the equation for "what you want" at the top
2. Fill in the information given
3. Start where all arrows go from and finish where all arrows go to
4. Put the two pathways from start → finish equal
5. Calculate the unknown

e.g. Calculate the standard enthalpy of formation of hexane using the standard enthalpy changes of combustion below.

| substance | $\Delta H_c^\theta / \text{kJmol}^{-1}$ |
|--------------------------------|---|
| C | -394 |
| H ₂ | -286 |
| C ₆ H ₁₄ | -4163 |



By Hess's Law $A = B + C$ so $B = A - C$

$$\text{Thus } B = [6(-394) + 7(-286) + 4163] \text{ kJmol}^{-1}$$

$$= [-2364 + -2002 + 4163] \text{ kJmol}^{-1}$$

$$= -203 \text{ kJmol}^{-1}$$