

STRATEGY FOR SOLVING...

What type of question / data???

Bond energies or ΔH info.



Bond making \div bond breaking
Breaking = endo
Making = exo

The difference between bond making and bond breaking = enthalpy change

Got all the necessary $\Delta_f H^\circ$ data?
Then use
$$\Delta_r H^\circ = \sum \Delta_f H^\circ(\text{products}) - \sum \Delta_f H^\circ(\text{reactants})$$

Remember some $\Delta_c H^\circ = \Delta_f H^\circ$ BUT not all — write the equation and check they are the same!!

Eg $\text{C(s)} + \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g})$ is the $\Delta_f H^\circ(\text{CO}_2)$ as well as being the $\Delta_c H^\circ(\text{C})$.

Need to use Hess's Law?
Either use the cancelling equations method OR triangle method.

UNITS

Use kJ except.... Use kJ mol^{-1} when...

- $\Delta_c H^\circ$ (one mole of stuff is burnt)
- $\Delta_f H^\circ$ (one mole of stuff is formed)
- $\Delta_r H^\circ$ ("one mole of reaction" — !!! — the quantities in the equation, one mole of equation — !!!).

It can be a bit of a grey area...