

$$\ln\left(\frac{k}{T}\right) = \frac{-\Delta H^\ddagger}{RT} + \ln\left(\frac{k'}{h}\right) + \frac{\Delta S^\ddagger}{R}$$

k = rate constant

T = temperature (K)

ΔH^\ddagger = enthalpy of activation (J mol^{-1})

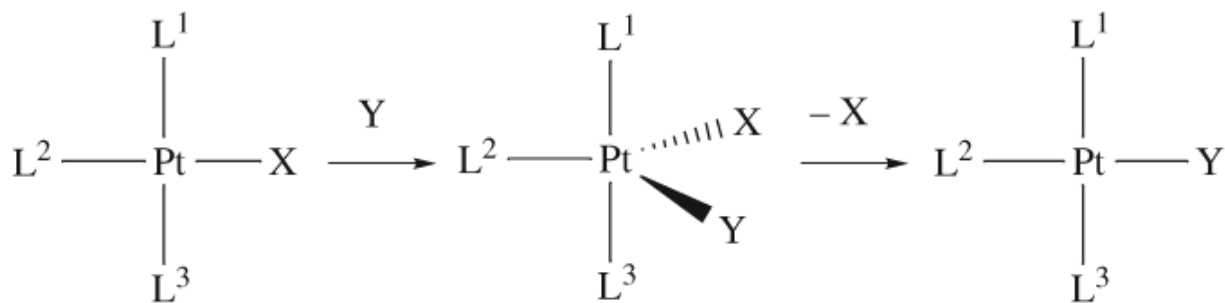
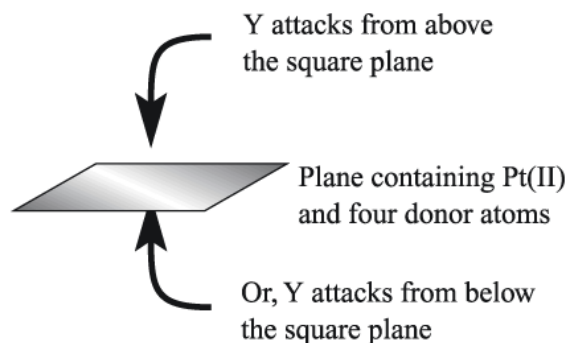
ΔS^\ddagger = entropy of activation ($\text{J K}^{-1} \text{mol}^{-1}$)

R = molar gas constant

k' = Boltzmann constant

h = Planck constant

An **Eyring plot** allows the activation parameters ΔS^\ddagger and ΔH^\ddagger to be determined from the temperature dependence of the rate constant; the dotted part of the line represents an extrapolation.



Initial attack by the entering group at a **square planar** Pt(II) centre is from above or below the plane. Nucleophile **Y** then coordinates to give a trigonal bipyramidal species which loses **X** with **retention** of stereochemistry.