

Question 6 - p. 499

$$K_{eq} = \frac{[PCl_3][Cl_2]}{[PCl_5]}$$

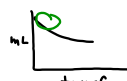

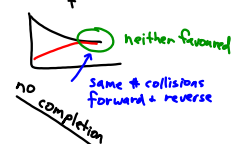
$$K_{eq} = \frac{(1.5 \times 10^{-2})(1.5 \times 10^{-2})}{1.2 \times 10^{-2}}$$

Meaning of Keq

Text p. 511

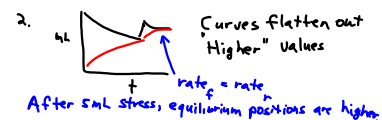
- When K_{eq} is large (> 1)
 $k \approx \frac{P}{R}$ ← larger than R
- When K_{eq} is small (< 1) $K_{(eq)} = \frac{P}{R}$ ← larger than P
- If $K_{eq} \approx 1$ $\frac{P}{R} \approx 1$

Equilibrium Analogy Questions

-  transfers
-  more Prod.
-  neither favored
no completion
same # collisions forward & reverse

Part B - Questions

1. Add a reactant/product.

-  Curves flatten out "Higher" values
rate_f = rate_r
After smk stress, equilibrium positions are higher.

Disturbing an Equilibrium-Activity

Change	Stress	Colour	Shift (R or P)
Add H ₂ O	↑ [H ₂ O]	pink	R
Add HCl	↑ [Cl ⁻]	blue	P
Add CCl ₂	↑ [Cl ⁻]	blue	P
Add AgNO ₃	↓ [Cl ⁻]	pink	R
Heat	↑ heat	blue	P
Cool	↓ heat	pink	R

$$50Ks + Co(H_2O)_6^{2+} + 4Cl^- \rightleftharpoons CoCl_4^{2-} + 6H_2O$$