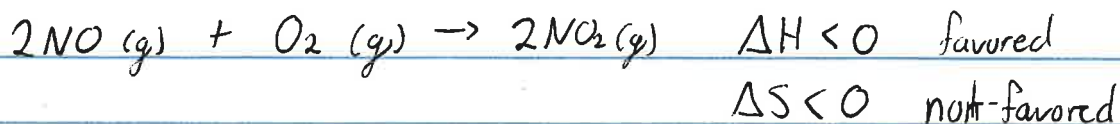


Today Feb 8: Sections 14.1-14.4

Sunday Feb 10: Problem club with Ali 6-7:30 epplay 107

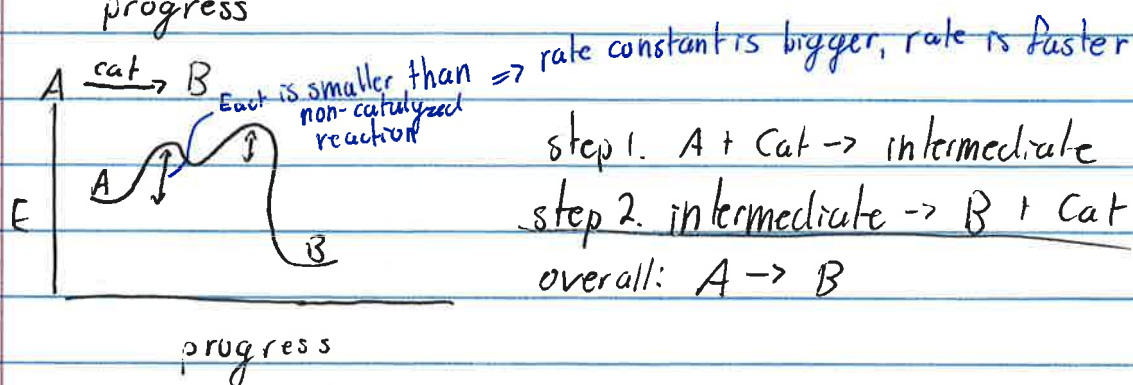
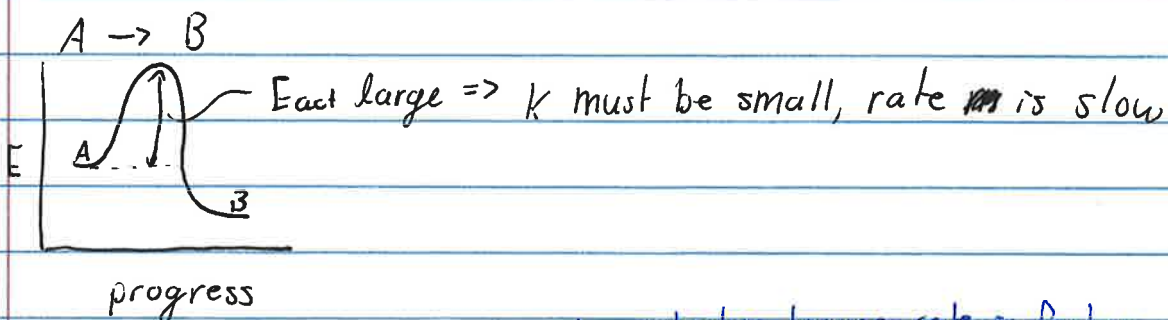
Monday Feb 11: ch 14 day 2



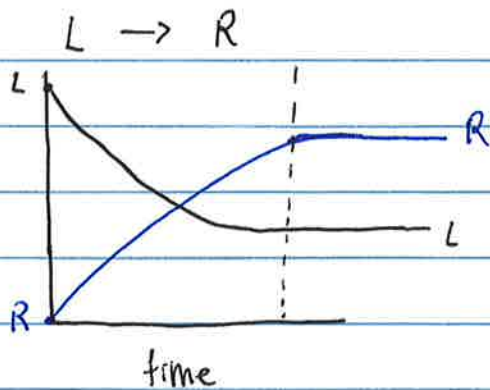
$$\text{rate} = k[\text{NO}]^2[\text{O}_2]^2$$



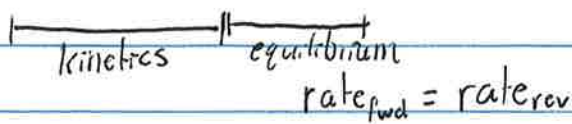
- Requires a catalyst
- exothermic



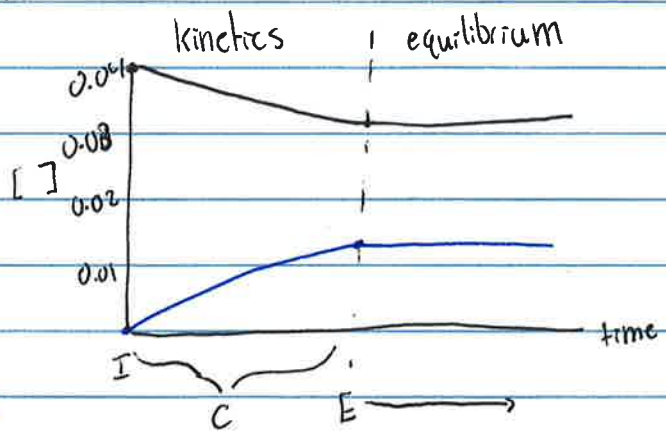
step 1. $A + \text{Cat} \rightarrow \text{intermediate}$
step 2. $\text{intermediate} \rightarrow B + \text{Cat}$
overall: $A \rightarrow B$



$$K_c = \frac{[R]}{[L]} = \frac{k_{\text{fwd}}}{k_{\text{rev}}}$$



M	$N_2O_4(g) \rightleftharpoons 2NO_2(g)$
I	0.0400 0
C	-0.0063 + (2 × 0.0063)
E	0.0337 0.0126



$$K_c = \frac{[NO_2]^2}{[N_2O_4]}$$

co-efficients become exponents

$$K_c = \frac{\cancel{0.0126}^2}{0.0337} = \boxed{4.7 \times 10^{-3}}$$

M	$2NO_2(g) \rightleftharpoons N_2O_4$	$K_c = \frac{1}{4.71 \times 10^{-3}} = 212 = \frac{(0.0337)}{(0.0126)^2}$
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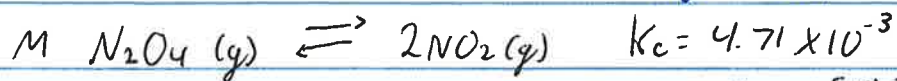
T

C

E	0.0126 0.0337
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↑ very important to write down how you are defining K_c

* K_c = equilibrium, Q_c = initial



$$I \quad 0.0200 \quad 0.0600 \quad \leftarrow \quad Q_c = \frac{[NO_2]^2}{[N_2O_4]} = 0.18$$

$$C \quad +x \quad -2x \quad Q_c > K_c \text{ so reaction shifts}$$

$$E \quad 0.02+x \quad 0.06-2x \quad \text{towards reactants}$$

$$K_c = \frac{[NO_2]^2}{[N_2O_4]} = 4.71 \times 10^{-3} = \frac{(0.06-2x)^2}{0.02+x}$$

do quadratic to solve for x