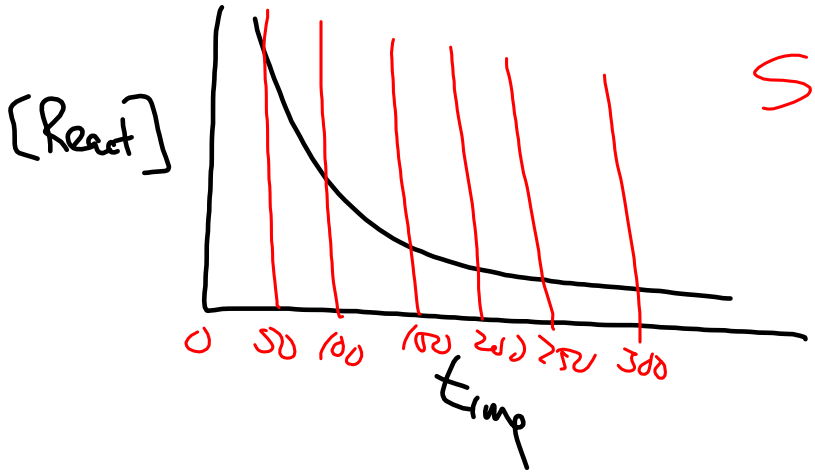
① Appearance = Disappearance

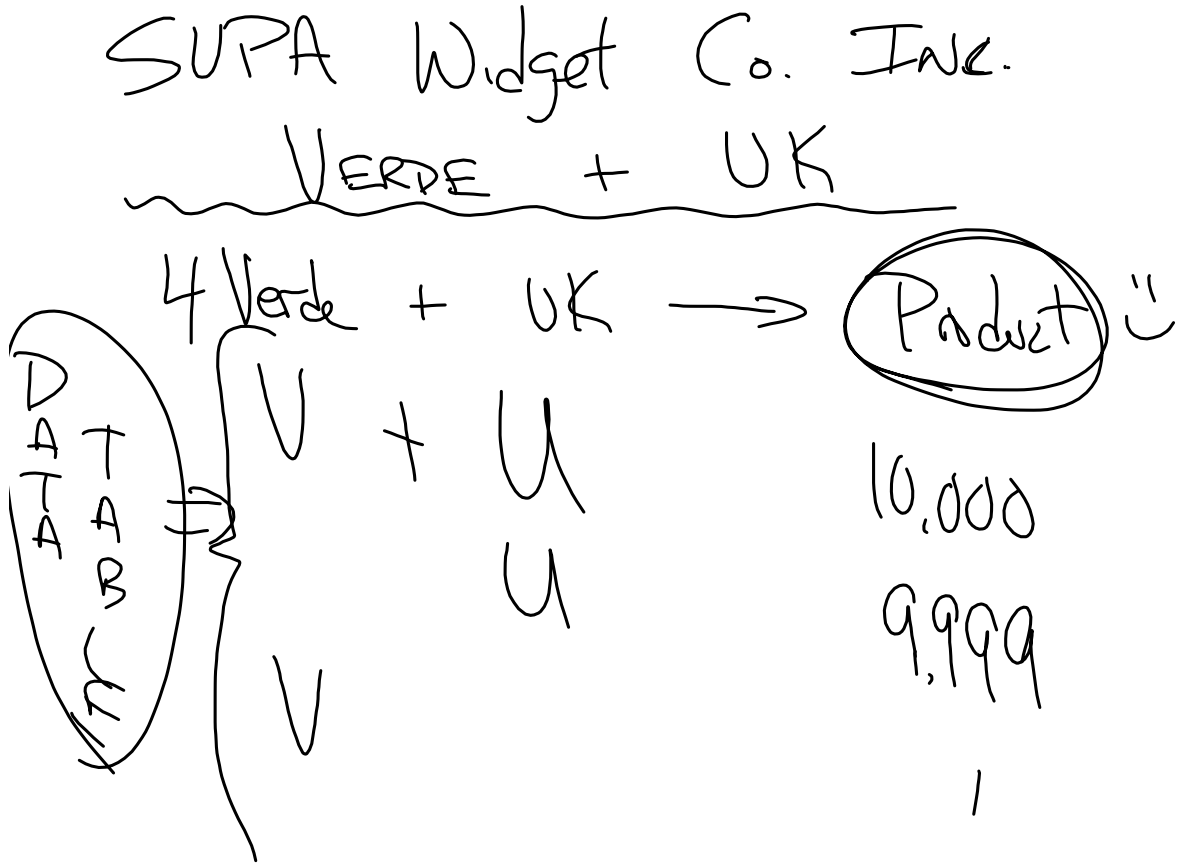


Feb 1-7:38 AM

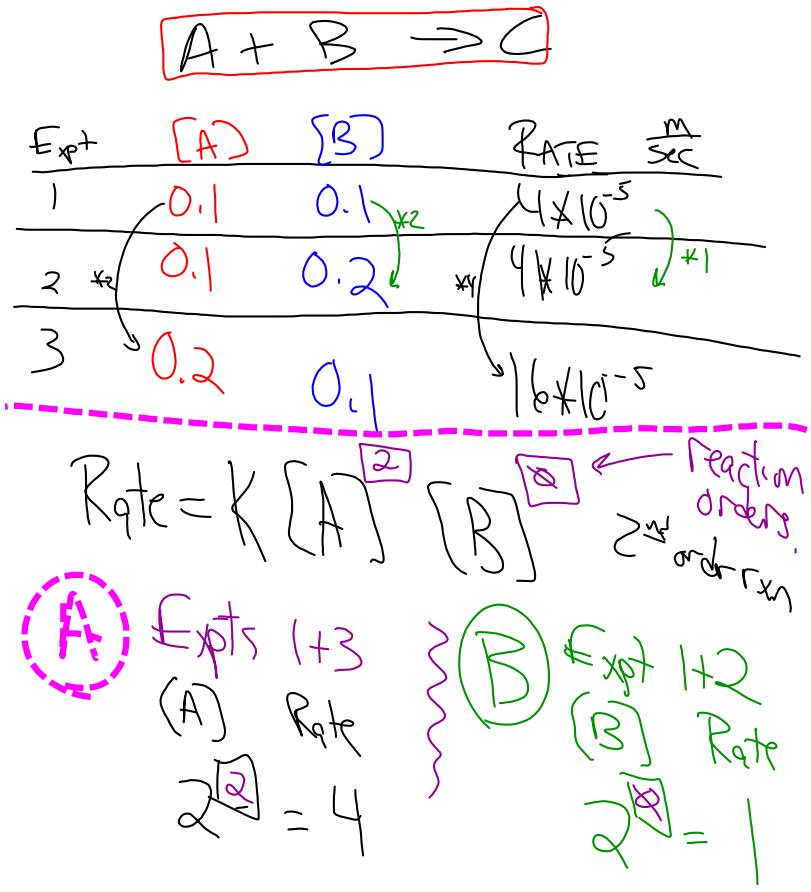
② RATE LAW

Rate of rxn depends on the Concentration (aq) / Pressure (g) of REACTANTS

Feb 1-8:05 AM



Feb 1-8:07 AM



Feb 1-8:18 AM

$2NO + 2H_2 \rightarrow N_2 + 2H_2O$

3rd order rxn

$Rate = K[NO]^{2}[H_2]^{1}$

DATA

	[NO]	[H_2]	
1	0.1	0.1	1.23×10^{-3}
2	0.1	0.2	2.46×10^{-3}
3	0.2	0.1	4.92×10^{-3}

NO 1+3: $2^{2} = 4$

H_2 1+2: $2^{1} = 2$

Feb 1-8:40 AM

$Rate = K[NO]^{2}[H_2]^{1}$ 3rd order

Double Both: $Rate = (2^2)(2^1) = 2^3$

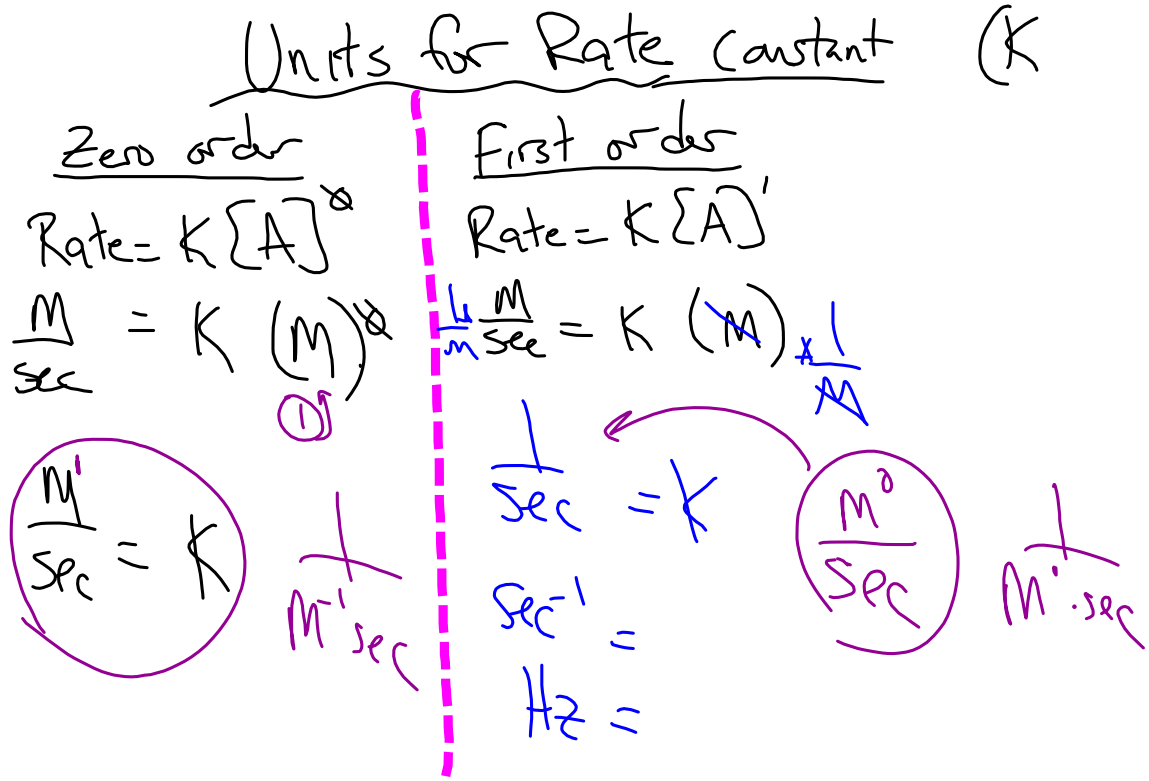
$= (4)(2)$

$Rate = 8x$

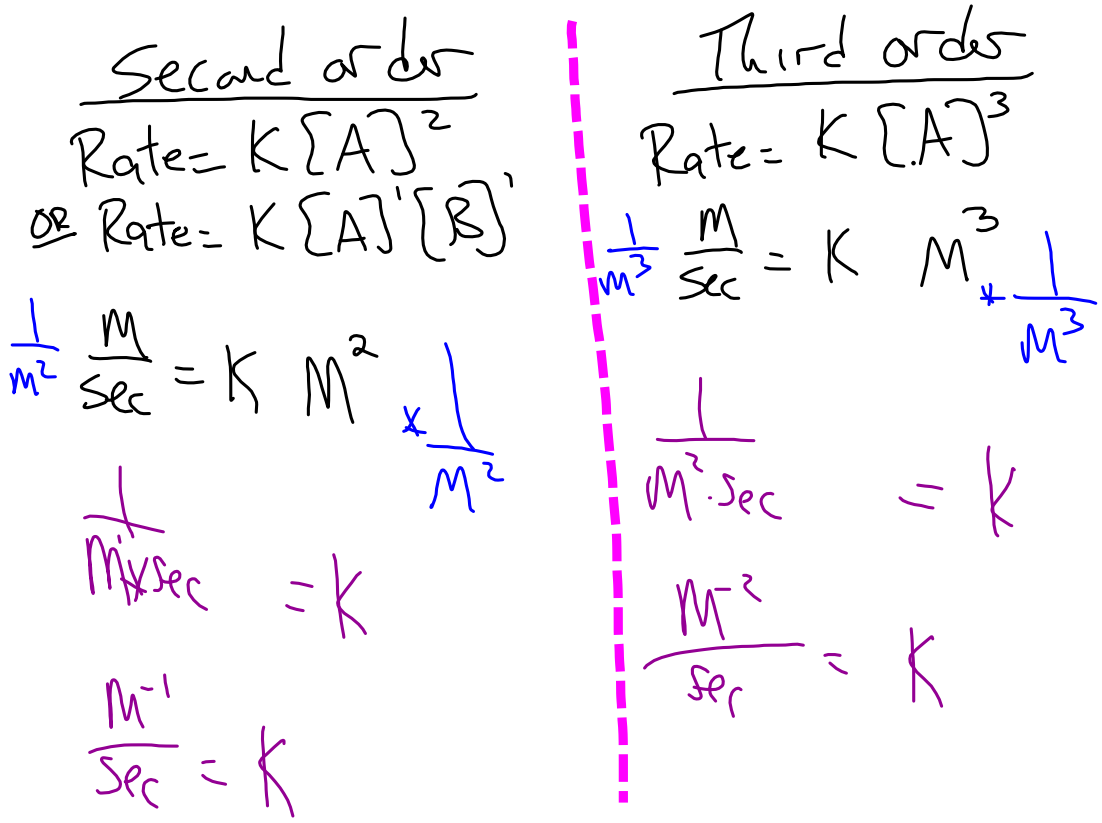
Triple Both: $= (3^2)(3^1) = 3^3 = 27$

Double [NO], 1/2 $[H_2]$: $= (2^2)(1/2^1) = 2$

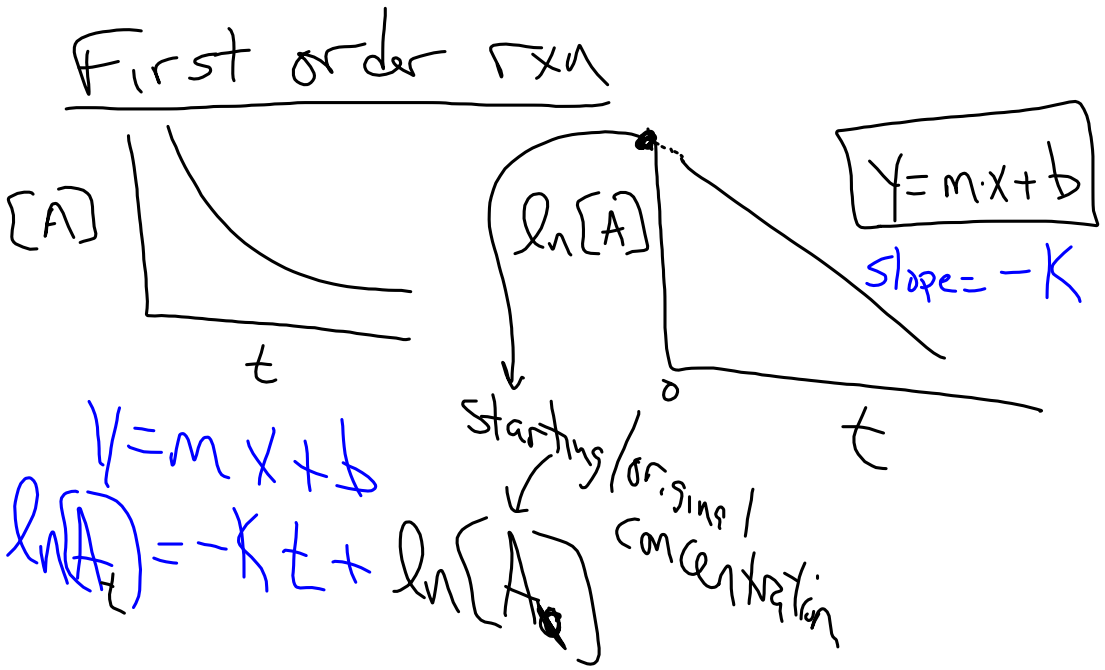
Feb 1-8:51 AM



Feb 1-8:55 AM



Feb 1-8:59 AM



Feb 1-9:06 AM

K and t MUST use same time units.

Feb 1-9:11 AM

1° $\ln[A_t] = -kt + \ln[A_0]$

$k = 1.45\ yr^{-1}$

$\frac{1}{mol \cdot yr}$

June 1 2017 $[5 \times 10^{-7}]$

June 1 2018 [?]

$\ln(A_t) = (-1.45)(1) + \ln(5 \times 10^{-7})$

e^x

$\ln(A_t) = -15.9586$ e^x

$[A_t] = 1.172 \times 10^{-7}\ M$

Feb 1-9:11 AM

$14 / 32 + 38$

Feb 1-9:17 AM