PS14-1

② $N_2 + 3H_2 \rightarrow 2NH_3$

$$-\frac{1}{3}\frac{\Delta[H_2]}{\Delta t} = +\frac{1}{2}\frac{\Delta[NH_3]}{\Delta t}$$

$$\frac{2}{3}\frac{\Delta[H_2]}{\Delta t} = \frac{\Delta[NH_3]}{\Delta t}$$

$\frac{2}{3}(1.72)$

Feb 5-8:03 AM

① 3rd order rxn

$$\frac{1}{m^2 \cdot sec} = \frac{1}{\frac{mole^2}{L^2} \cdot sec}$$

$$\frac{L^2}{mole^2 \cdot sec}$$

$L^2 \cdot mole^{-2} \cdot sec^{-1}$

Feb 5-8:42 AM

(5) $\ln A_t = -Kt + \ln A_0$

$\ln A_t = -(3.4\times10^{-3})(120) + \ln(0.5)$

sec

2 min = 120 sec

(11)

[ ] rate

$1.5^{x} = 2.3$

$x \log 1.5 = \log 2.3$

$x = \frac{\log 2.3}{\log 1.5} = 2.05$

Feb 5-8:46 AM

(13) Rate $= K[A]^{2}[B]^{0}$

Exp 1-2

A rate

$2^{2} = 4$

2 → 4 B rate

$2^{0} = 1$

Feb 5-8:49 AM

(12) 1°, $K = 3.4\ sec^{-1}$ 1050K

after 1 sec Find % N_2O remaining.

$$\ln A_t = -Kt + \ln A_0$$

100% to start

$$\ln A_t = -(3.4)(1) + \ln 1$$

$A_t = 0.0333$

3.33%

Feb 5-8:51 AM

(17) 2°, 200°C $K = 0.014 \frac{L}{mole \cdot sec}$, time = ?

for 90% to react

$$\frac{1}{A_t} = Kt + \frac{1}{A_0}$$

$A_0 = 100$ → 0.1

$A_t = 10$ → 0.01

$$\frac{1}{0.01} = (0.014)t + \frac{1}{0.1}$$

Feb 5-8:55 AM

(18) 1° $t_{1/2} = \frac{0.693}{k}$ 2° $t_{1/2} = \frac{1}{k[A]}$

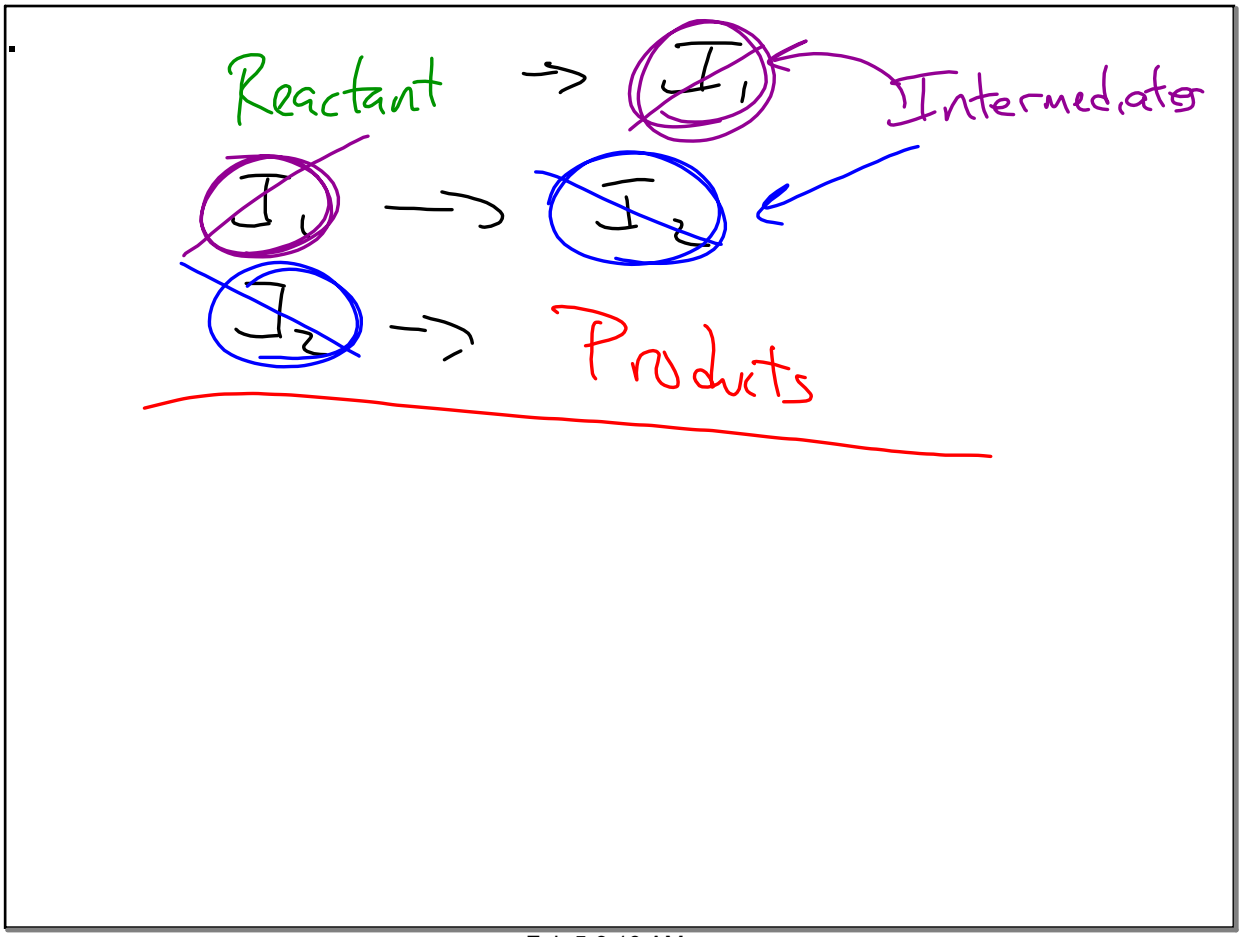
$t_{1/2}$ changes with $[A]$

$\frac{46}{1} = \frac{1}{k[0.04]}$

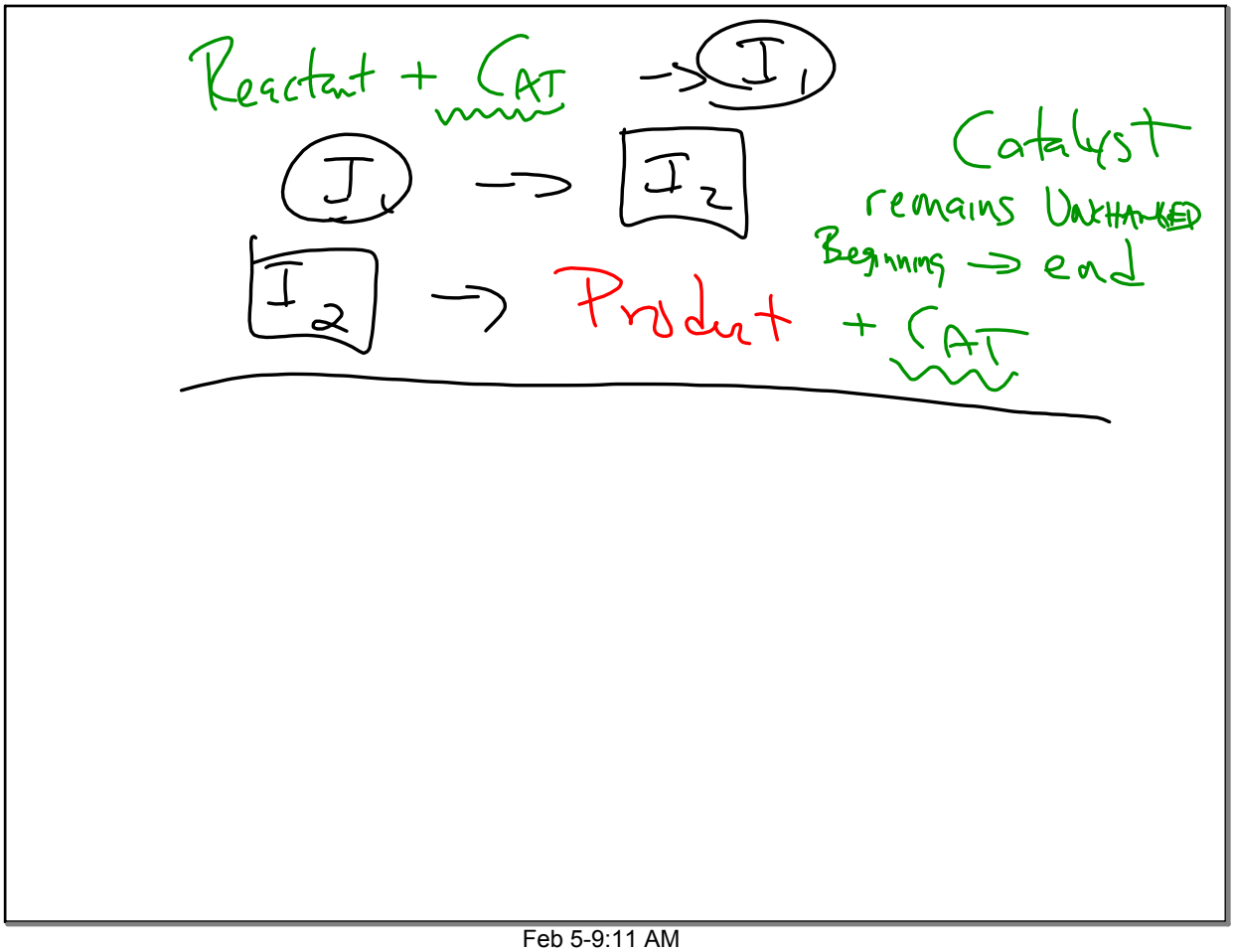
$\frac{k}{1} = \frac{1}{46(0.04)}$

$k = 0.543$

Feb 5-8:59 AM



Feb 5-9:10 AM



Feb 5-9:11 AM

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Feb 5-9:15 AM