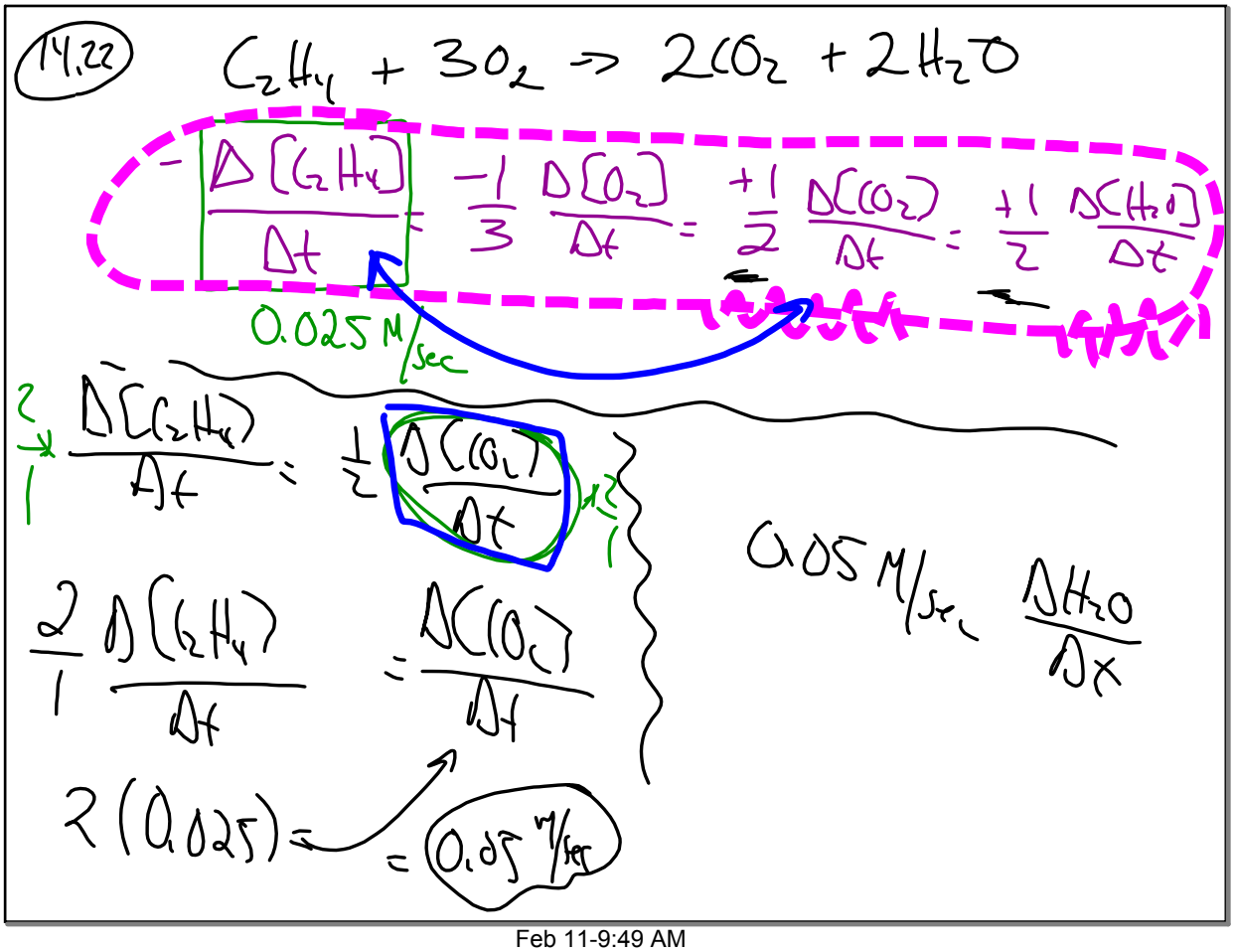
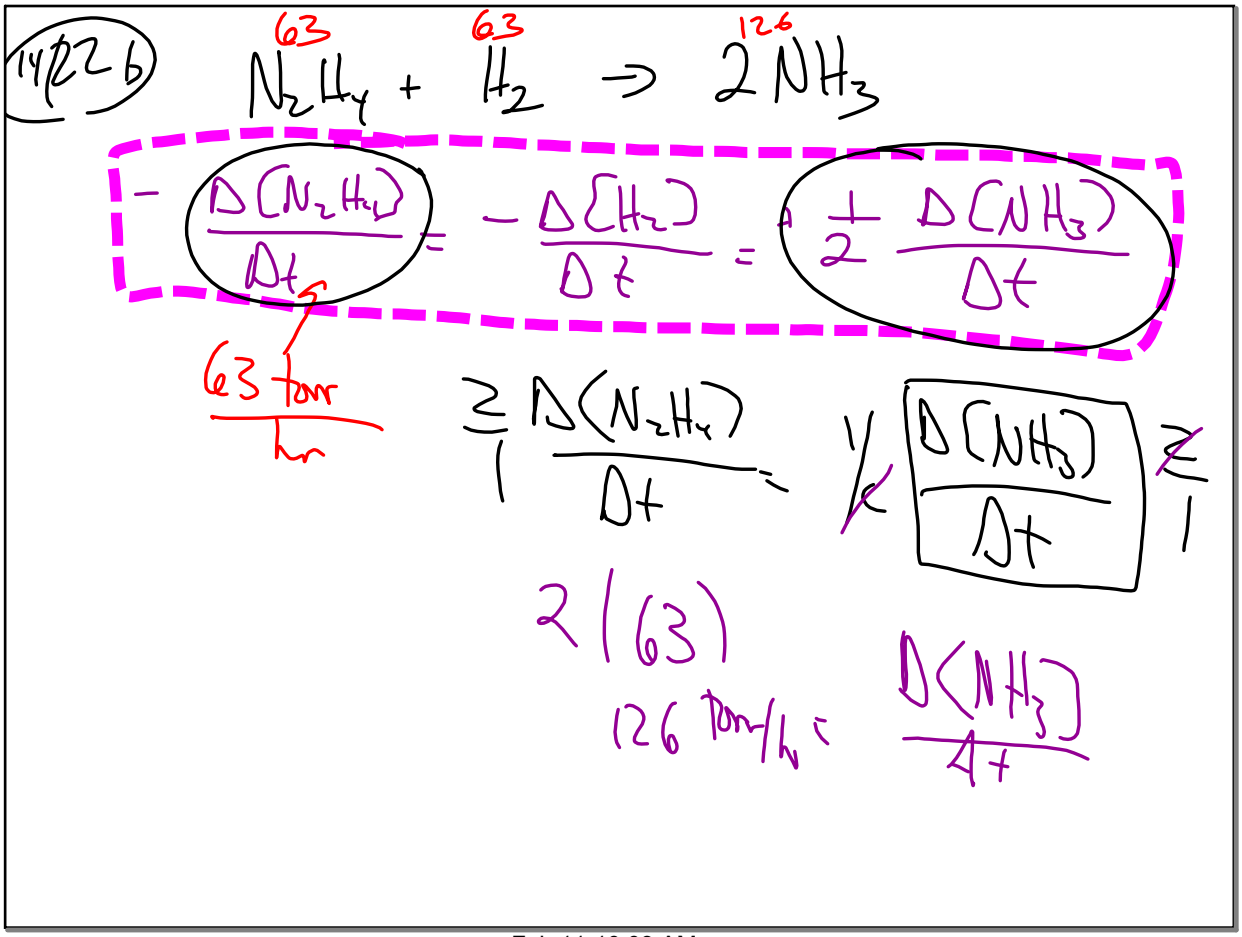
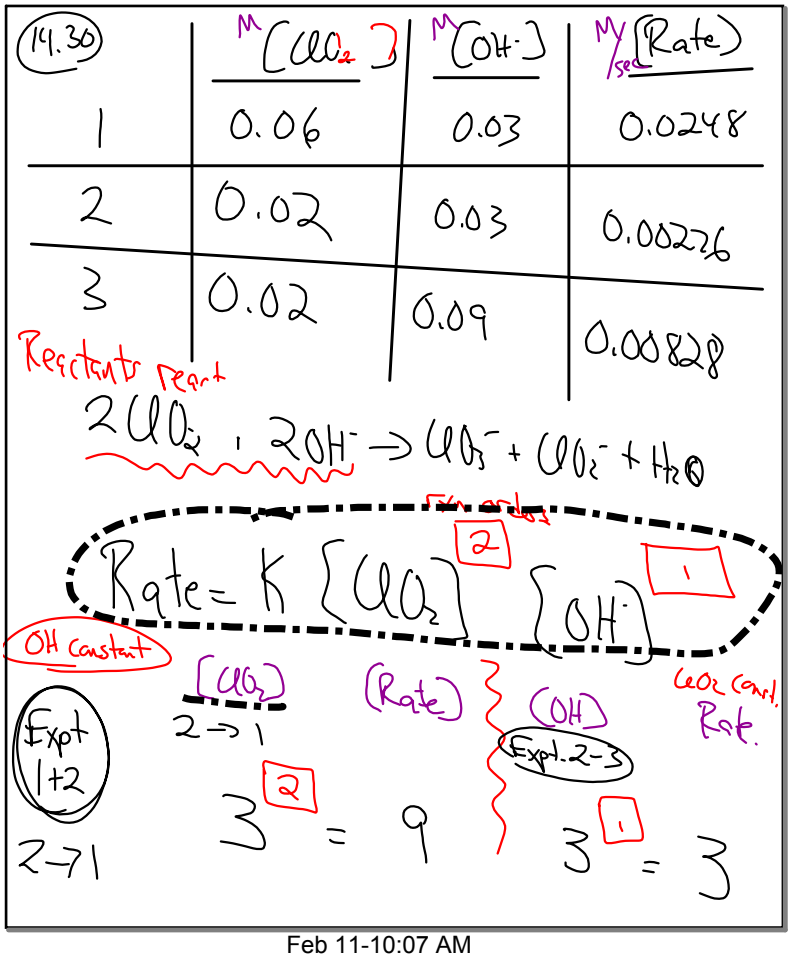


Feb 11-9:49 AM



Feb 11-10:03 AM



Feb 11-10:07 AM

$$\text{Rate} = k[ClO_2]^2[OH]^1$$

2^{nd} order in ClO_2

1^{st} order in OH

} 3^{rd} order overall

Feb 11-10:18 AM

$$\text{Rate} = k[ClO_2]^2[OH^-]^1$$

EXPT ①: $0.0248 = k[0.06]^2[0.03]^1$

$$k = 2296.3 \ \frac{1}{M^2 \cdot sec}$$

$$\text{Rate} = (229.63)(0.1)^2(0.05)^1$$

$$\text{Rate} = 0.115 \ M/sec$$

Feb 11-10:19 AM

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

EXPT	[NO]	$[H_2]$	Rate
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}

$\times 2$ (NO: 0.1 → 0.2); $\times 2$ (H_2: 0.1 → 0.2); $\times 2$ (Rate: 1.23×10^{-3} → 2.46×10^{-3}); $\times 4$ (Rate: 1.23×10^{-3} → 4.92×10^{-3})

$$\text{Rate} = k[NO]^2[H_2]^1$$

1→3 (H_2 const): [NO] rate

$2^2 = 4$

1→2 (NO const): $[H_2]$ rate

$2^1 = 2$

Feb 11-10:25 AM

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

Rxn Organic.

If double $[NO]$ (2^2) 4 (Rate)

If double $[H_2]$ 2 (Rate)

If double both $[NO]$ and $[H_2]$ 2^2 2^1

(4) (2)

8 (Rate)

Feb 11-10:35 AM

Values of K

A → Product

Zero order rxn

$\text{Rate} = K[A]^0$

$\frac{M}{sec} = K(1)$

$\frac{M^1}{sec} = K = \frac{1}{M^{-1} * sec}$

$\frac{X^2}{1} = \frac{1}{X^{-2}}$

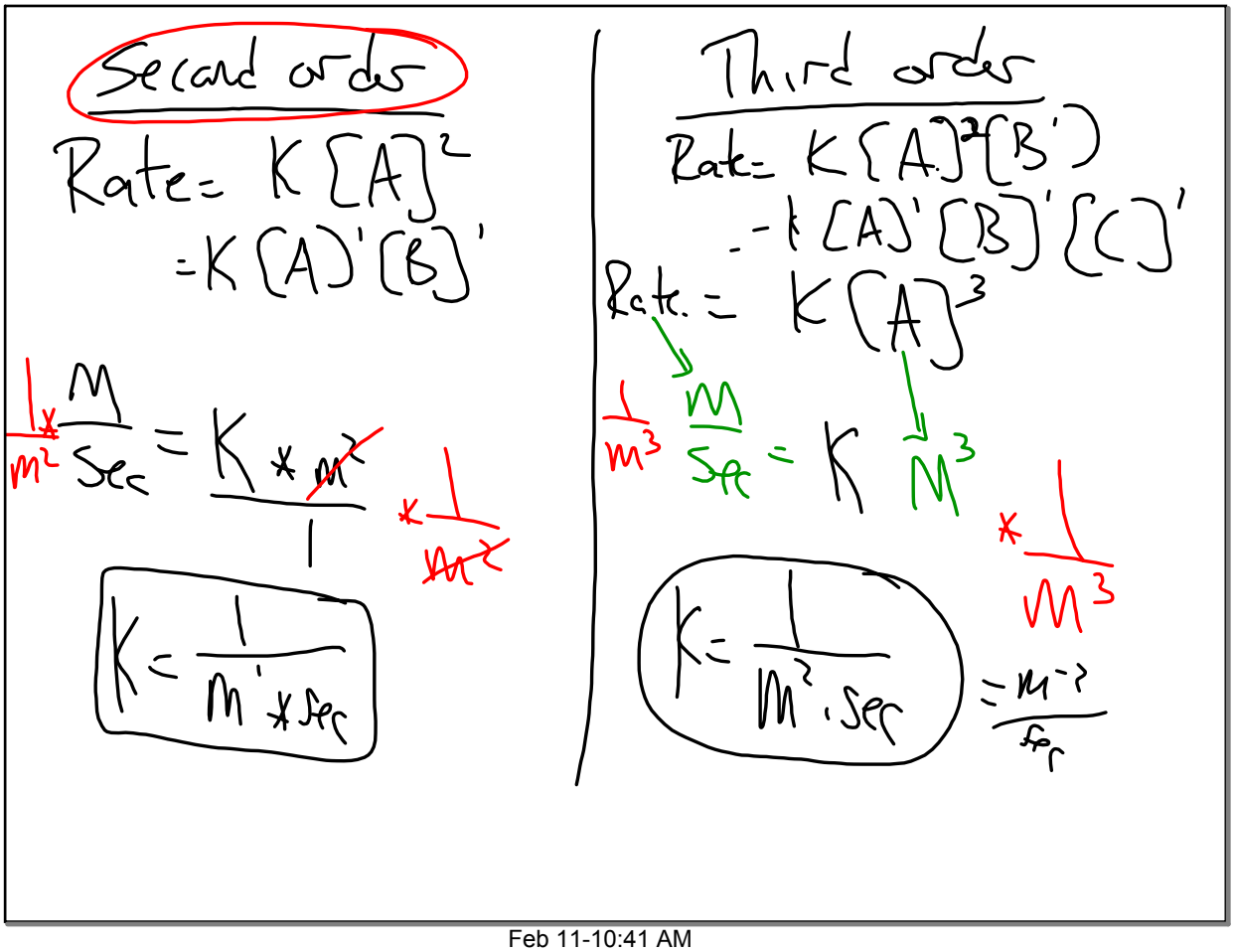
First order

$\text{Rate} = K[A]^1$

$\frac{1}{M} * \frac{M}{sec} = K \frac{M}{1} * \frac{1}{M}$

$K = \frac{1}{sec}$ or $\frac{1}{M^0 * sec}$

Feb 11-10:38 AM



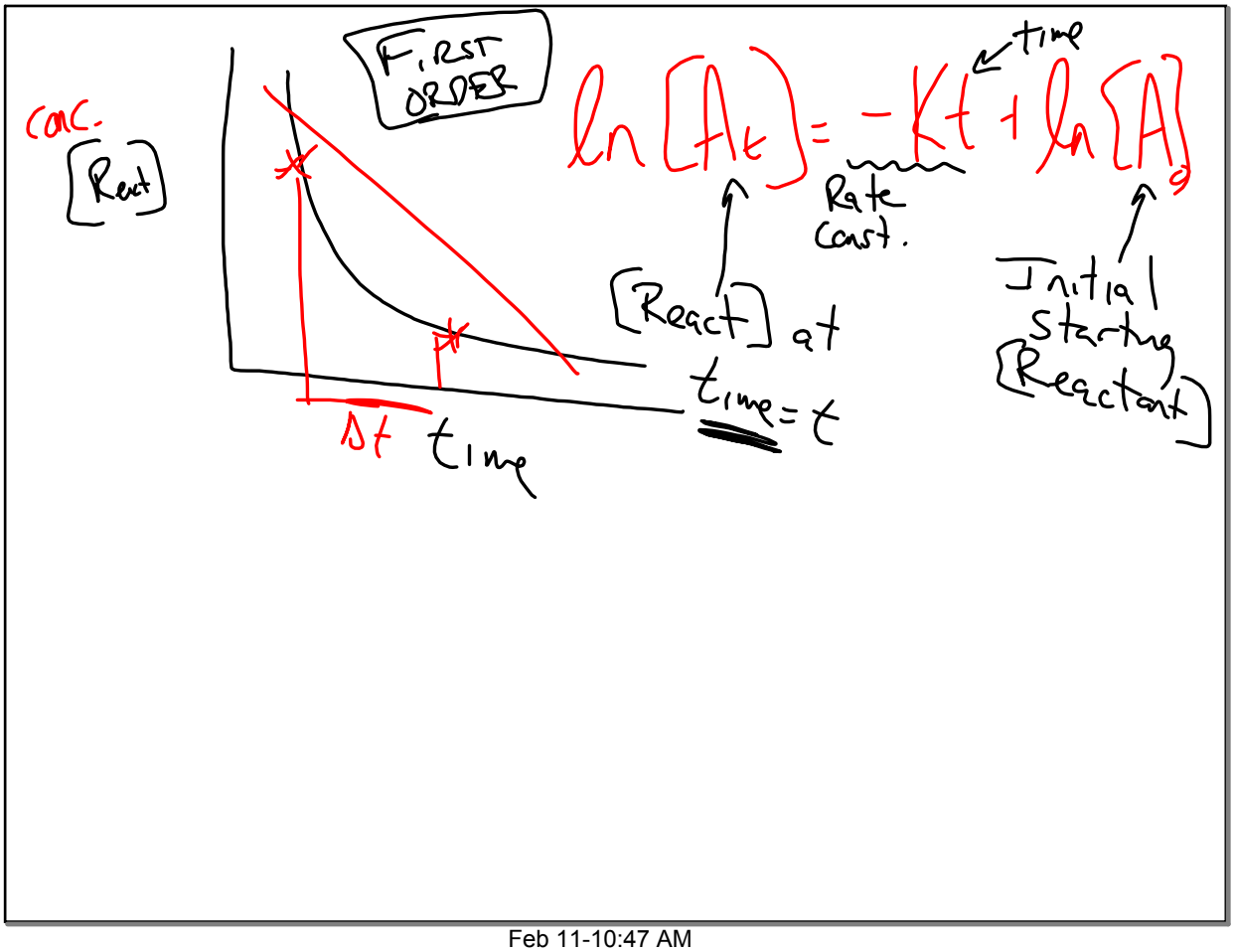
Feb 11-10:41 AM

$$K = \frac{1}{M^{(\text{order}-1)} * \text{Sec}}$$

5th order

$$\frac{1}{M^4 \cdot \text{Sec}}$$

Feb 11-10:45 AM



Feb 11-10:47 AM

HW

14 / 24 + 32

Feb 11-10:51 AM