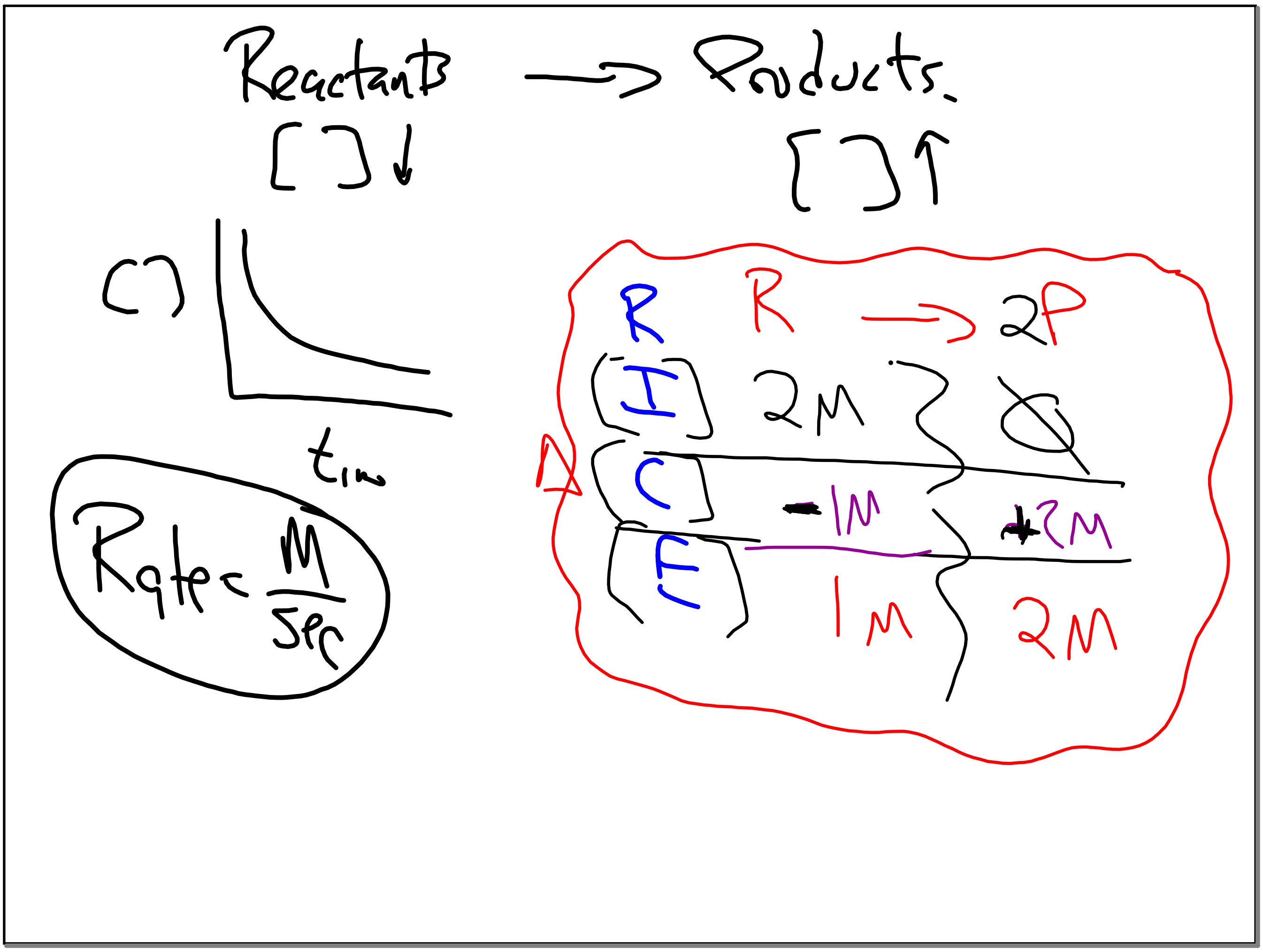

Feb 2-7:36 AM

$$2H_2 + O_2 \rightarrow 2H_2O$$

Reactants — Product.

$$-\frac{1}{2}\frac{\Delta[H_2]}{\Delta t} = -\frac{\Delta[O_2]}{\Delta t} = +\frac{1}{2}\frac{\Delta[H_2O]}{\Delta t}$$

Reactants disappear

Products appear

$$2A + 3B \rightarrow 7C$$

$$-\frac{1}{2}\frac{\Delta[A]}{\Delta t} = -\frac{1}{3}\frac{\Delta[B]}{\Delta t} = +\frac{1}{7}\frac{\Delta[C]}{\Delta t}$$

$$aA + bB \rightarrow cC + dD$$

$$-\frac{1}{a}\frac{\Delta[A]}{\Delta t} = -\frac{1}{b}\frac{\Delta[B]}{\Delta t} = +\frac{1}{c}\frac{\Delta[C]}{\Delta t} = +\frac{1}{d}\frac{\Delta[D]}{\Delta t}$$

Feb 2-7:53 AM

$$2A + 3B \rightarrow 7C$$

If the rate of disappearance of B is 5 M/sec, what is the rate of appearance of C?

App / Disapp

$$\frac{7}{1} \cdot -\frac{1}{3}\frac{\Delta[B]}{\Delta t} = \frac{7}{1} \cdot +\frac{1}{7}\frac{\Delta[C]}{\Delta t}$$ Find

$$\frac{7}{3}\frac{\Delta[B]}{\Delta t} = \frac{\Delta[C]}{\Delta t}$$

$$\frac{7}{3}(5) = \frac{\Delta[C]}{\Delta t}$$

$$+11.67 \text{ M/sec} = \frac{\Delta[C]}{\Delta t}$$

Feb 2-7:58 AM

$$2N_2O_{5(g)} \rightarrow 4NO_{2(g)} + O_{2(g)}$$

$-4.2 \times 10^{-7} \frac{M}{sec}$ $+8.4 \times 10^{-7}$ $+2.1 \times 10^{-7}$

$2N_2O_5 \rightarrow 4NO_2$

$$\frac{4}{1} \times -\frac{1}{2} \frac{\Delta[N_2O_5]}{\Delta t} = \frac{4}{1} \times +\frac{1}{4} \frac{\Delta(NO_2)}{\Delta t}$$

$$\frac{4}{2} \frac{\Delta[N_2O_5]}{\Delta t} = \frac{\Delta(NO_2)}{\Delta t}$$

$$-\frac{1}{2} \frac{\Delta(N_2O_5)}{\Delta t} = +\frac{1}{1} \frac{\Delta(O_2)}{\Delta t}$$

$$\frac{1}{2}(4.2 \times 10^{-7}) =$$

Feb 2-8:07 AM

1 frame + 4 tires = 1 car

$$-\frac{1}{1}\frac{\Delta(\text{frames})}{\Delta t} = -\frac{1}{4}\frac{\Delta(\text{tires})}{\Delta t} = +\frac{1}{1}\frac{\Delta(\text{cars})}{\Delta t}$$

Feb 2-8:09 AM

Rate LAW (M/Ses)

↳ Speed (Rate) of a reaction.

ONLY depends on [reactants]

concentration of reactants

Feb 2-8:16 AM

$$Rate = K\,[reactant\ 1]^{m}\,[reactant\ 2]^{n}$$

K ← reaction constant {Rate constant}

m, n ← reaction orders

$$Rate = K[NH_4^+]^{\square}[NO_2^-]^{\square}$$

14 / 16 + 22

9