Chap 14 - Chemical Kinetics.

How FAST a reaction goes.

1. Temperature. → More fasterer
   More collisions / unit time
2. Pressure of gases → Closerer together
   More collisions / unit time
3. Catalyst - Lowers (E_a) Energy of activation.
4. Concentration (Reactants)
5. Surface Area.

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1. PE Reactants
2. PE Products
3. ΔH_{rxn}
4. E_a forward
5. E_a Reverse rxn
6. Activated complex
7. PE of activated complex.
8. Cat. forward rxn
9. Cat. Reverse rxn

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decrease Reactant → Product increases

2A → 3B

[Initial] Concentration: 10 | Q | time = Q

[Change] −5 | +7.5 | MOLE RATIO

[Final] 5 | 7.5

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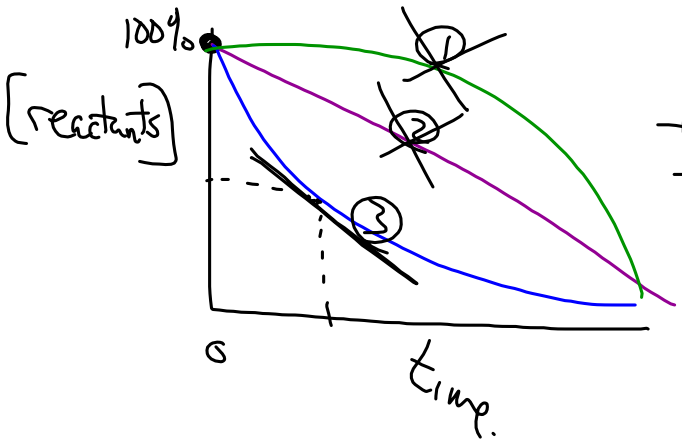
Rate of disappearance (Reactants)

Rate of appearance (Products)



tangent - instantaneous

$\frac{\Delta[\ ]}{\Delta t}$

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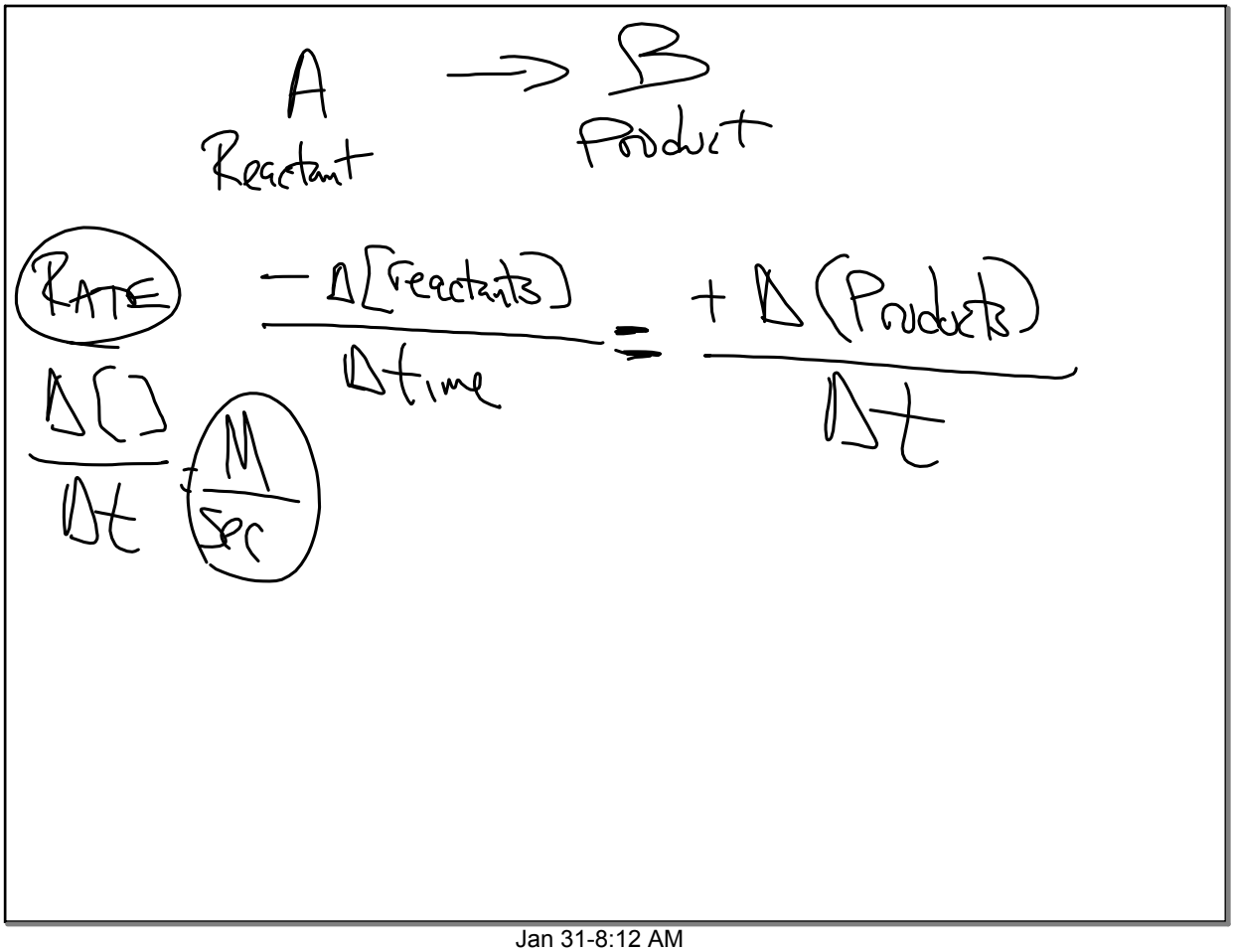

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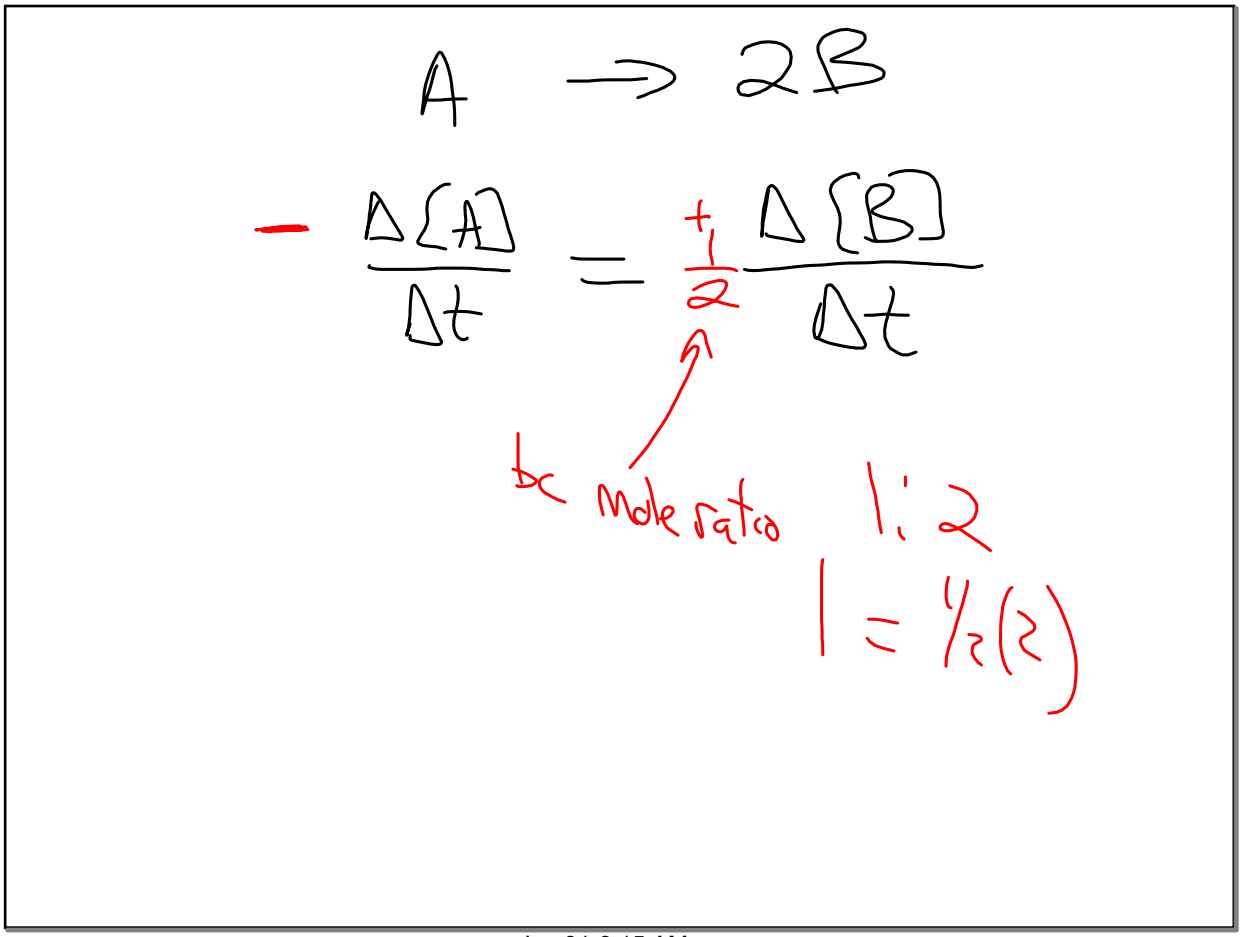

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$$2A \rightarrow 3B$$

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

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GENERAL RULE

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

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

RATE (Δ)

$$\frac{\Delta[B]}{\Delta t} = \frac{b}{d}\frac{\Delta[D]}{\Delta t}$$

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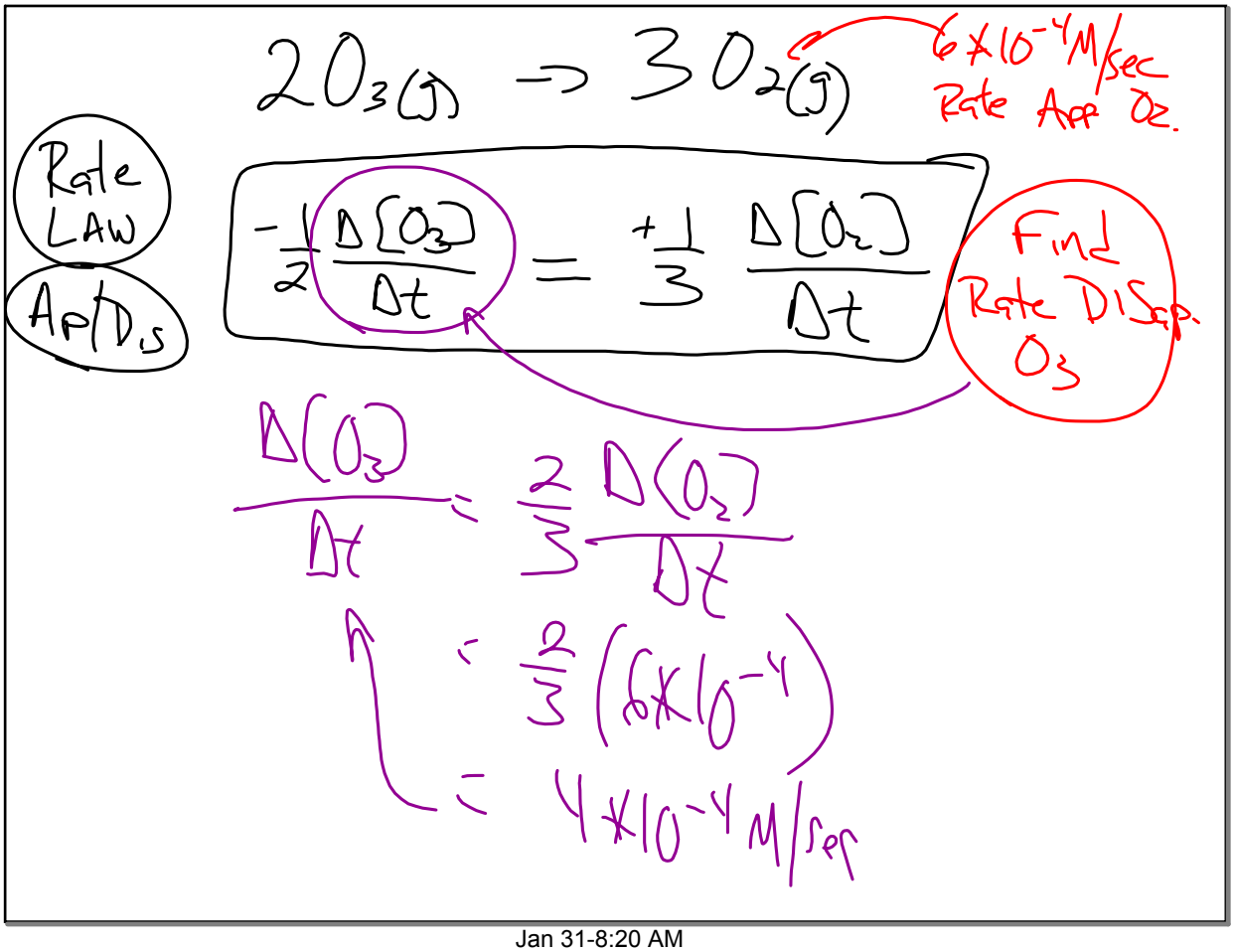

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14 / 20 + 22

Jan 31-8:28 AM