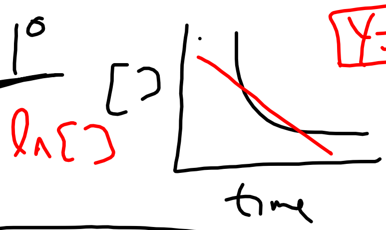
1°

$\boxed{y = mx + b}$



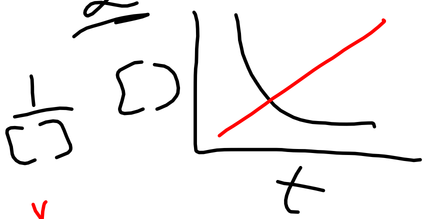
y = m x + b

$$\boxed{\ln A_t = -kt + \ln A_0}$$

end — time — start

$$\boxed{t_{1/2} = \frac{0.693}{k}}$$

2°



y = m x + b

$$\frac{1}{[A_t]} = kt + \frac{1}{[A_0]}$$

end — start

$$t_{1/2} = \frac{1}{k[A_0]}$$

K and t must have same units of time

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(11.24) (a)

$$\text{Rate} = k\,[A]^1[B]^0[C]^2$$

$$\text{Rate} = k\,[A]^1[C]^2$$

10^1 10^2

10^3

3^1 3^0 3^2

3^3

27x

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(14.32)

$$\text{Rate} = k[NO]^{\boxed{2}}[O_2]^{\boxed{1}}$$

$1 \to 2$

$\frac{NO}{2^{2}} = \frac{\text{rate}}{4}$

$2 \to 3$

$\frac{O_2}{2^{1}} = \frac{\text{rate}}{2}$

$$\text{Rate} = k[A]^3$$

$$\frac{\frac{M^1}{sec}}{M^3} = k\frac{\cancel{M^3}}{\cancel{M^3}}$$

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

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$$k = \frac{1.45}{yr}$$

$5 \times 10^{-7}\, g/cm^3$ A_0

1yr from now A_t

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