* 2nd Order Reaction

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

$$-\frac{dA}{dt} = k [A]^2$$

find eqn

$$\frac{1}{[A_t]} = \frac{1}{[A_0]} + kt \qquad A_0 = \text{initial Conc}^n$$

Half life

$$A_t = \frac{A_0}{2}$$

$$t_{1/2} = \frac{1}{k[A_0]} \quad (\text{depends on } [A_0])$$

* Rxn involving several reactants

* Ostwald's isolation Method

(when all reactants except one taken in excess amount so that change in their concentration is negligible.

$aA + bB + cC \longrightarrow$ Products

Rate $= k[A]^{\alpha}[B]^{\beta}[C]^{\gamma}$

if B & C are in large amount. So change in conc^{n} remain const.

$r = k'[A]^{\alpha}$

* Pseudo first order reaction

(Ex^{n} which are not 1st order, but under certain cond^{n} rx^{n} becomes 1st order are called Pseudo 1st order Ex^{n}.)

Ex^{n}

$A + B \longrightarrow$ Products

$r = k[A]^{1}[B]^{1}$

order = 2

if A or B is in large amount

(A in excess) (B in excess) $r = k'[A]$ or $r = k'[B]$

order = 1 order = 1

2nd order Ex^{n} becomes 1st order by one of the reactants taking in excess.