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First order vs zero order kinetics

A first-choice reaction is a reaction that occurs at a rate that depends linearly on the concentration of only one reagent. Differential laws are commonly used to describe what occurs at the molecular level during the reaction, while integrated rate rules are used to determine the response sequence and rate constant value from experimental measurements. The differential equation describing kinetics of the first sequence is given below: \[Rate = \ dfrac{d[A]}{dt} = k[A]^1 = k[A] \label{1}\] speed is the response rate (in molar/time units) and \(k\) is the response factor (unit 1/time). However, the \(k\) units differ for reactions that are not in the first sequence. These differential equations are separable, which simplifies the solutions as shown below. First, write the differential form of the betting law. \[Rate = - \dfrac{d[A]}{dt} = k[A]\label{2}\] Reorrange to give: \[\ dfrac {d [A]} ([A]} = - k\,dt \label{3}\] Second, integrate both sides of the equation. \[\int_{[A]_o}^{[A]} \dfrac{d[A]}{[A]} = -\int_{t_o}^{t} k\, dt \label{4a}\] \[\int_{[A]_{o}}^{[A]} \dfrac{1}{[A]} d[A] = -\int_{t_o}^{t} k\, dt \label{4b}\] Atgādināt no calculus, ka: \\ int \dfrac{1} (x) = \ln(x) \label{5} \] Pēc integrācijas, \[\ ln [A] - \ ln [A] _o = -kt \label{6} \] Pārkārtot, lai atrisinātu [A], lai iegūtu vienu no likuma par likmi formu: \[\ln[A] = \ln[A]_o - kt \label{7}\] To var pārkārtot šādi: \[\ln [A] = -kt + \ln [A]_o \label{8}\] To var vēl vairāk sakārtot y=y=100000000000