1. Two Compartment Model of Blood Alchohol Content

The objective in this exercise is to create a spreadsheet that uses a discrete dynamical system consisting of a system of two equations with arbitrary input in each time interval to create a two compartment model of blood alchohol content (BAC). The input will represent intake of alchohol at that point in time, and the compartments will represent the alchohol in the digestive tract (d_n) and in the bloodstream (b_n):

$$\begin{aligned} d_{n+1} &= f1(d_n, b_n) + a_n \\ b_{n+1} &= f2(d_n, b_n) \end{aligned}$$

- You can choose any time interval you like.
- You can decide which factors to incorporate into the elimination model for each compartment.
- You can decide what additional parameters (age, weight, percent body fat, etc.) you would like to incorporate.

Once your spreadsheet is constructed, you should use it to model two or three different intake scenarios.

Each team should plan on submitting their spreadsheet to the eLearn dopbox for today's assignment by the end of class.

Each team will be asked to briefly present their results.