

Chemistry 5850 Summer 2004 Assignment 1

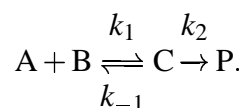
Due: Thursday, May 13.

The assignments will always be due at the next scheduled lecture.

Weight of this assignment: 20 marks

Since this is the first assignment, the weight won't mean much this time around. However, this assignment will set a baseline relative to which the weights of later assignments can be judged.

1. Give two examples of natural or technological systems which could be described as dynamical systems. These examples must be significantly different from each other and from any concrete examples mentioned in class. Characterize the sets T and X for these systems. Say as much as you can about the nature of the map ϕ^t in each case. (It's sometimes difficult to be precise about the nature of the map ϕ^t for real systems.) [10 marks]
2. Sketch the trajectories for the chemical reaction mechanism



Think hard about the mass conservation relations, and don't forget to cast your ODEs in dimensionless form. [10 marks]