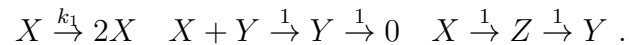


# Homework 7

Math 669, Spring 2022

This homework is due on Monday, March 28.

1. Determine whether the following chemical reaction network (where some of the rate constants have been set to 1) admits a Hopf bifurcation (with respect to the remaining parameter: the rate constant  $k_1$ ):



2. In several sentences, describe the main message of Prof. Hening's lecture on Monday, March 21.
3. In several sentences, describe the main message of Prof. Hening's lecture on Wednesday, March 23.
4. Propose a homework problem arising from the topics covered in lecture this week (Mar. 21–23). Solve it.