TMA4195 Mathematical modelling 2004

Exercise set 6

Advice and suggestions: 2004–09–28

Exercise 1: (A.C. Fowler: *Mathematical models in the applied sciences*, ex. 2 p. 143.) A continuous flow reactor of volume V_R introduces enzyme and substrate at concentrations e_0 and s_0 at rate V (volume per unit time) and removes the stirred mixture at the same rate. Model the reaction and show that a steady state can exist. Is it stable?

Exercise 2: Logan page 404–405 (in the compendium), problem 3.4.

Exercise 3: Logan page 405 (in the compendium), problem 3.6.