

Algebraic Methods in Kinematics

Homework 7

Give examples of parametric systems of algebraic equations with the following properties.

- a) The dimension of the solution set varies at least between 3 numbers. That is, there are three integers $a < b < c$ such the system has instances with solution set of dimension a , instances with solution set of dimension b , and instances with solution set of dimension c .
- b) Some instance has no solution, the generic instance has exactly one solution, and some instance has more than one solution.