

Homework 1: Linear Algebra

Antonis Papadakis, Erik Boelen Theile, Taoyu Mei

December 7, 2023

This is the first homework in the series of the A. Beyer lectures and following seminars. You need to submit a written solution to apapada1@uni-koeln.de in the form of R code with your comments until the December 13th).

Exercise

On a sunny day, two tables are standing in a German country garden. On each table birds of unknown species are sitting having the time of their lives.

A bird from the first table says to those on the second table: “Hi – if one of you comes to our table, then there will be the same number of us on each table”.

“Yeah, right”, says a bird from the second table, “but if one of you comes to our table, then we will be twice as many on our table as on yours”.

Question: How many birds are on each table?

Solve the system of linear equations using **matrices**, not substitution or elimination. The purpose of each step in the code should be clearly described in the comments.