EXAM FOR "LINEAR ALGEBRA 4" (6LAG4)
SUMMER SEMESTER 2023/2024

QUESTIONS SET NO. 1

1. Define an affine map. Give examples of affine maps. Give examples of maps between affine spaces which are not affine.

2. Give an example of a linear programming problem which has:
1) exactly one solution;
2) exactly two solutions;
3) an infinite number of solutions.

3. Let P_1 and P_2 be projective lines in a projective space, V_1 and V_2 are vector spaces such that $P_1 = P(V_1)$ and $P_2 = P(V_2)$, and the vector space $V_1 + V_2$ is 4-dimensional. Prove that P_1 and P_2 do not intersect.