
Linear algebra: Homework Week 8, 22/3/2019

Ex. (1).

Given the two points $P=(3,1)$ and $Q=(1,4)$ of the affine plane \mathbb{A}^2 write the parametric and cartesian equations of the line r passing through P,Q . Is the point $R=(-3,10)$ a point of r ?

Ex. (2).

A line r in the euclidean affine space \mathbb{E}^3 is specified by the following cartesian equation:

$$r : \begin{cases} x + 2y - 3z = 4 \\ x - 3y + z = 1 \end{cases}$$

1. Write the parametric equation of r .
2. Given a point $A=(1,2,3)$, find the distance $d(A,r)$.

Ex. (3).

In the euclidean affine space \mathbb{E}^3 four points A,B,C,D are given: $A=(1,0,0)$, $B=(0,2,1)$, $C=(1,3,0)$ and $D=(4,4,4)$.

1. Write the cartesian equation of the plane π passing through A,B,C .
2. Find the distance between the plane π and the point D .