MATH 201: LINEAR ALGEBRA
HOMEWORK DUE FRIDAY WEEK 13

Problem 1. Let $P = \{(-1, 0), (1, 4), (2, 4), (3, 6)\} \subseteq \mathbb{R}^2$. Find the least squares line of best fit through P via the following methods:

(a) Using the adjoint matrix method.
(b) Using Gram–Schmidt to compute an orthogonal projection.

Problem 2. For the same set of points $P \subseteq \mathbb{R}^2$ as in Problem 1, find the principal components. Compare and contrast the direction of the first principal component to the direction of the least squares line of best fit.