

Homework 2

We are given

$$\mathbf{X} = \begin{bmatrix} 1 & -3 & 0 \\ 1 & -2 & 1 \\ 1 & -1 & 4 \\ 1 & 0 & 9 \\ 1 & 1 & 16 \\ 1 & 2 & 25 \\ 1 & 3 & 36 \end{bmatrix}, \text{ and } \mathbf{y} = \begin{bmatrix} 1 \\ 2 \\ 3 \\ 5 \\ 7 \\ 9 \\ 11 \end{bmatrix}.$$

Write your own code to conduct the regression analysis based on

1. Householder transformation.
2. Givens transformation.

You should report regression coefficients (with standard errors), residuals, and the ANOVA table.