

**EX.4.1.9.b, Sauer3**

Find the best parabola through each data point set in EX.4.1.8.b, and compare the RMSE with the best-line fit. The points are

$$(1, 2), \quad (3, 2), \quad (4, 1), \quad (6, 3).$$

**Instructions:**

Please handwrite the matrix  $A$  and  $b$ , and then use python to solve the linear least squares problem by giving  $x$  to 3 digits after the dot. Then write the best-fit polynomial (with 3 digits after the dot coefficients). Then compute the RMSE with Python and please compare the RMSE of this problem with the RMSE of EX.4.1.8.a.

So to repeat, I need: (1)  $A$ ,  $b$ , (2)  $x$ , (3) parabola, (4) RMSE, and (5) comparison of RMSEs.