**EX.4.1.9.a, Sauer3**

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

$$(0,0), \quad (1,3), \quad (2,3), \quad (5,6).$$

**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.