1) Compute (formally) the Hausdorff dimension of a unit cube $[0, 1]^d$ in $\mathbb{R}^d$.

2) Prove that the Hausdorff dimension of the ternary Cantor set is $\log_3(2)$.

3) Generate the datasets described in Section 3.4.1 of the textbook. Use the 6 dimension estimation methods contained in the Matlab Toolbox for Dimensionality Reduction:

http://homepage.tudelft.nl/19j49/Matlab_Toolbox_for_Dimensionality_Reduction.html

Draw conclusions.