

$$1. \quad y = \sin(x) + N(\mu, \sigma)$$

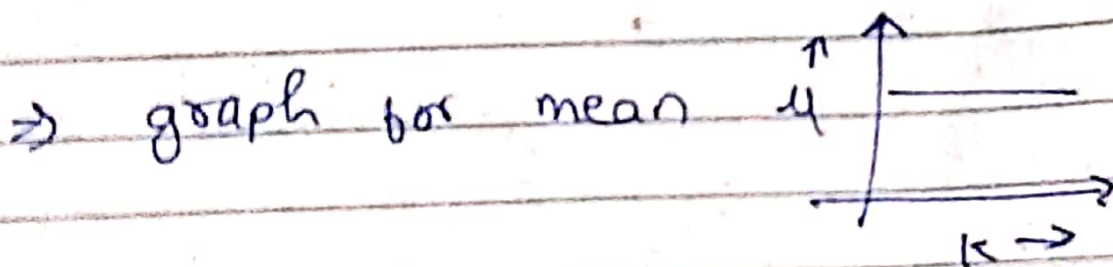
$$w = (x^T x)^{-1} x^T y$$

$$\text{predicted} = w^T x$$

$$\text{error} = |\text{Predicted} - \text{Ground-truth}|$$

for Mean:-

The plot should be \parallel to x -axis, because for a given dataset, mean of any point chosen at random from the dataset should be same as of any $p \geq 2$ random points.



for variance:

The plot for variance vs k should decrease as the value of k increases it will choose points with more variances and if k is smaller variance will be large.