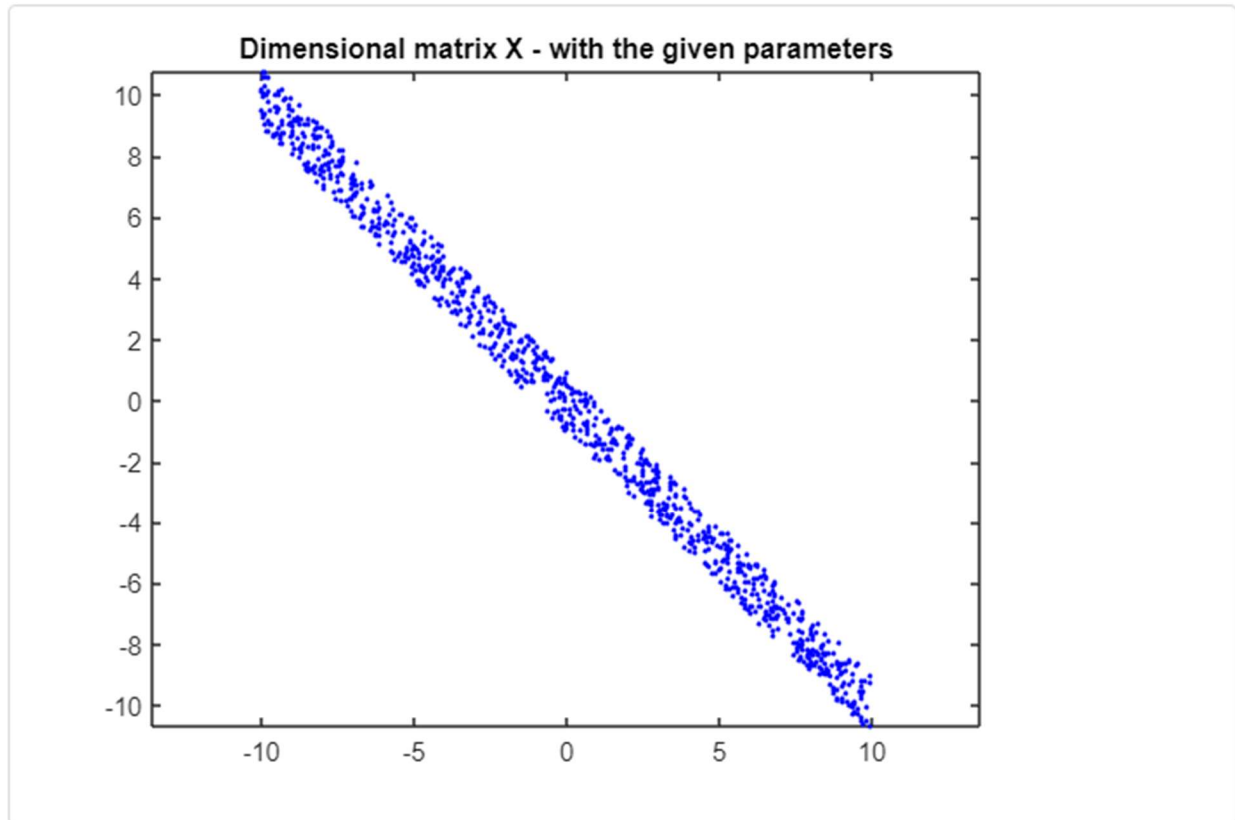


## Homework-7

6.1. a.

```
X = 2x1000
-1.4588    9.1074    4.4849    1.6178    0.8052    4.1088   -9.8994    5.6503 ...
 0.7965   -8.6171   -4.5307   -1.3109    0.1280   -4.4828    9.0523   -5.0675
```



b. the principal components of the covariance of X as well as the corresponding variances (eigenvalues) are:

```
pc = 2x2
-0.7058    0.7084
 0.7084    0.7058

variances = 2x1
68.6763
 0.1591
```

Direction conclusion: The first principal component is the direction in space along which projections have the largest variance, which is going to be orthogonal like b.