Task3

1. 1: Scale data so that mean = 0 and std = 1

-0.547723, -1.095445

-1.095445, -0.547723

1.095445,  0.547723

0.547723,  1.095445

2: Covariance matrix:

1, 0.8

0.8, 1

3: Eigenvalues and eigenvectors:

λ = 1.8, or λ = 0.2

corresponding eigenvectors are:

0.70710678, -0.70710678

0.70710678,  0.70710678