Programming Homework:

1. Choose 10 cities in China and Asia.
2. Compute distances between each pairs to form the distance matrix D and D(2).
3. Compute the centered matrix B =0.5J D(2) J.
4. Compute eigenvectors of B.
5. The embedding coordinates are the 2 eigenvectors with largest eigenvalues
6. Draw the figure, the embedding.

Homework (theory):

Why the multidimensional scaling can recover the original map exactly?
Hint: Show
(i) B =0.5J D(2) J = X X'.
(ii) Embedding coordinates = X.