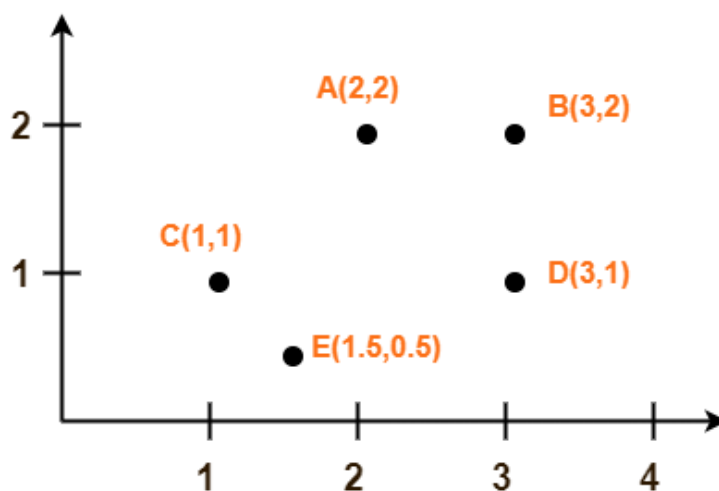


Homework 6 (Written)

Problem 1

Use the K-Means Algorithm to create two clusters for the following data:



Assume $A(2,2)$ and $C(1,1)$ are the initial centers of the two clusters. For the first iteration, cluster the points, and update the centers.

Problem 2 (MATH 5027 ONLY)

Show that μ_k can be updated by Eqn. (4) once r_{ik} 's are fixed, i.e., if r_{ik} 's are fixed, Eqn. (1) can be minimized by choosing μ_k 's as shown in Eqn. (4).