

Problem 8: Clustering – k-means method

Suppose that the data mining task is to cluster the following eight points (with $(x; y)$ representing location) into three clusters.

$A1(2; 10); A2(2; 5); A3(8; 4); B1(5; 8); B2(7; 5); B3(6; 4); C1(1; 2); C2(4; 9)$.

The distance function is Euclidean distance. Suppose initially we assign $A1$, $B1$, and $C1$ as the center of each cluster, respectively. Use the *k-means* algorithm to show *only*

- (a) The three cluster centers after the first round of execution and
- (b) The final three clusters