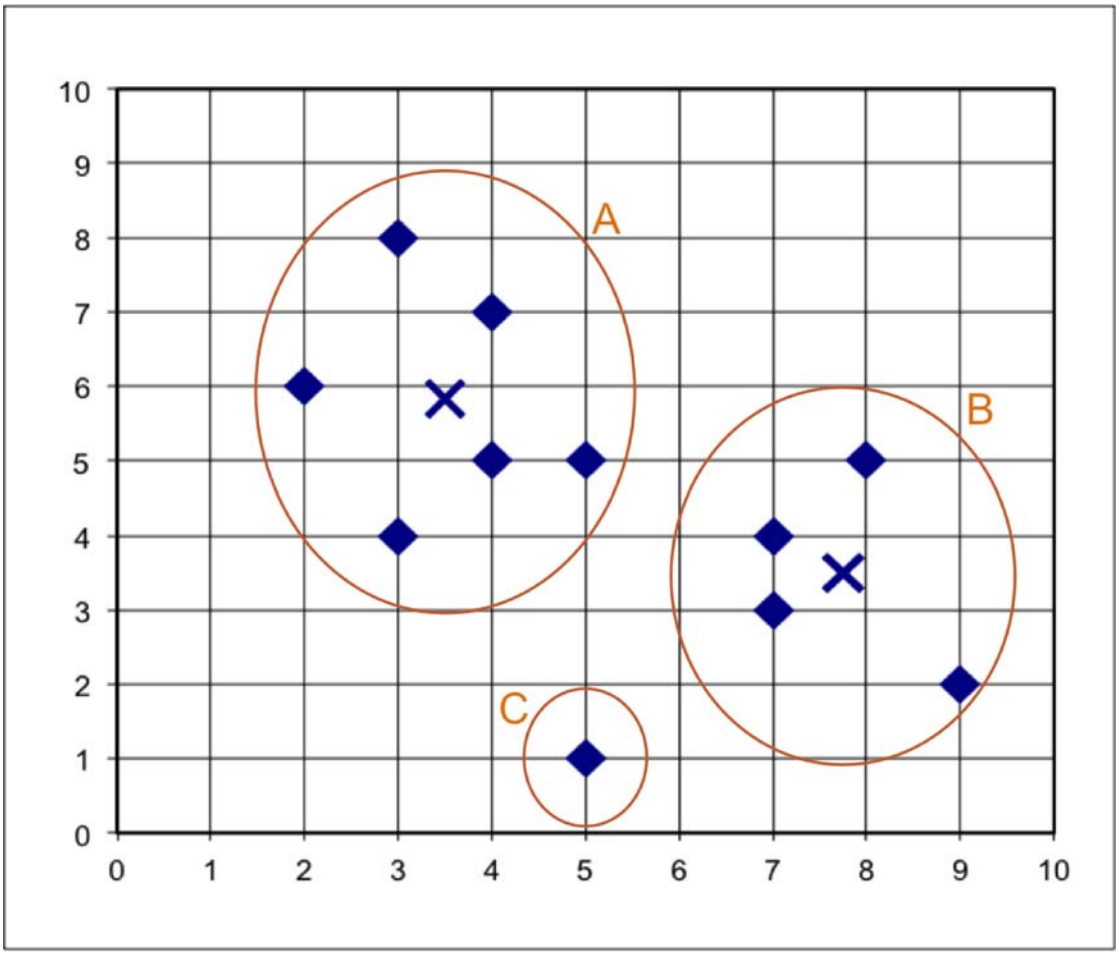
Lesson 4 Quiz

TOTAL POINTS 4

1. Which of the following is a hierarchical clustering algorithm? 1 point

- (●) BIRCH
- ( ) DBSCAN
- ( ) K-Means
- ( ) K-Medoid

2. Consider the three clusters A, B, and C shown in Figure 1. Using Euclidean distance as the similarity measure, which two clusters would be merged first in agglomerative clustering using centroid link? Centroids in A and B are marked by x. 1 point



- ○ A and B
- ○ A and C
- ◉ B and C
- ○ All three options above are tied.

3. Consider the three hierarchical clustering algorithms introduced in Lecture 4, BIRCH, CURE, and CHAMELEON. Which of the following statements about these algorithms is TRUE? 1 point

- ○ All three algorithms can only work with Euclidean distance as the similarity metric.
- ○ BIRCH and CHAMELEON both use a two-phase algorithm where small clusters are first formed via a divisive mechanism before some other clustering algorithm is used to merge them into the final clusters.
- ○ All three algorithms are good at detecting irregular (nonspherical) shaped clusters.
- ◉ Clustering results of BIRCH are sensitive to the insertion order of data points.

4. Recall from Lecture 4-8 that the objective of learning generative models is to find the parameters that maximize the likelihood of the observed data. Suppose we have a set of points D drawn from Gaussian distribution. For D = {-5, 5, 15}, which of the following set of parameters (μ, σ) produces the maximum $L(N(\mu, \sigma^2): D)$? 1 point

- ◉ μ = 5, σ = 10
- ○ μ = 10, σ = 5
- ○ μ = 5, σ = 5
- ○ μ = 0, σ = 5

☐ I, **BAL KRISHNA NYAUPANE**, understand that submitting work that isn't my own may result in permanent failure of this course or deactivation of my Coursera account.

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