Lesson 3 Quiz

TOTAL POINTS 5

1. Considering the k-means algorithm, after the current iteration we have three centroids (0, 1), (2, 1), and (-1, 2). Will points (0.5, 0.5) and (-0.5, 0) be assigned to the same cluster in the next iteration? 1 point

- (●) Yes
- ( ) No

2. Considering the k-means algorithm, if points (1, -3), (1, 1), and (-2, 2) are the only points that are assigned to the first cluster now, what is the new centroid for this cluster? 1 point

- (●) (0, 0)
- ( ) (0, 3)
- ( ) (0, 2)
- ( ) (-2, 1)

3. The k-means++ algorithm is designed for better initialization for k-means, which will take the farthest point from the currently selected centroids. Suppose k = 2, and we have selected the first centroid as (0, 0). Among the following points (these are all the remaining points), which one should we take for the second centroid? 1 point

- ( ) (0, 1)
- (●) (3, 0)
- ( ) (-2, 1)
- ( ) (2, -2)

4. Considering the k- median algorithm, if points (-1, 3), (-3, 1), and (-2, -1) are the only points that are assigned to the first cluster now, what is the new centroid for this cluster? 1 point

- ( ) (0, 3)

- (-2, 1)
- (0, 0)
- (0, 2)

5. Which of the following statements about the k-means algorithm are correct? Select all that apply. 1 point

- [x] The k-means algorithm is sensitive to outliers.
- [ ] For different initializations, the k-means algorithm will definitely give the same clustering results.
- [ ] The k-means algorithm can directly handle non-numerical (categorical) data.
- [x] The centroids in the k-means algorithm may not be any observed data points.

- [ ] 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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