

1
point

1. Considering the k-means algorithm, after the current iteration we have three centroids (0, 1), (2, 1), and (-1, 2). Will points (2, 3) and (-0.5, 0) be assigned to the same cluster in the next iteration?

- ☐ Yes
- ☒ No

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point

2. Considering the k-means algorithm, if points (0, 3), (2, 1), and (-2, 2) are the only points that are assigned to the first cluster now, what is the new centroid for this cluster?

- ☐ (0, 3)
- ☐ (-2, 1)
- ☒ (0, 2)
- ☐ (0, 0)

$$(0+2-2/3, 3+1+2/3) = (0, 2)$$



Lesson 3 Quiz

Quiz, 5 questions

1
point

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?

- ☒ (4, 0)
- ☐ (2, 0)
- ☐ (-2, 1)
- ☐ (0, 3)

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point

4. Considering the k-median algorithm, if points (0, 3), (2, 1), and (-2, 2) are the only points that are assigned to the first cluster now, what is the new centroid for this cluster?

- ☒ (0, 2)
- ☐ (0, 0)
- ☐ (-2, 1)

$$(0+2-2/3, 3+1+2/3) = (0, 2)$$

1
point

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



For different initializations, the k-means algorithm will definitely give the same clustering results.



The centroids in the k-means algorithm may not be any observed data points.



The k-means algorithm can generate non-convex clusters.



The k-means algorithm is sensitive to outliers.



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