

QUIZZ

Total points 7/11

a little practice for next week's midterm

The respondent's email (**yuansh24@bu.edu**) was recorded on submission of this form.

✓ Lloyd's algorithm always converges * 1/1

☒ True



☐ False

✓ It's possible for a point assigned to a cluster by Kmeans to have a silhouette score that is negative. *1/1

☒ True

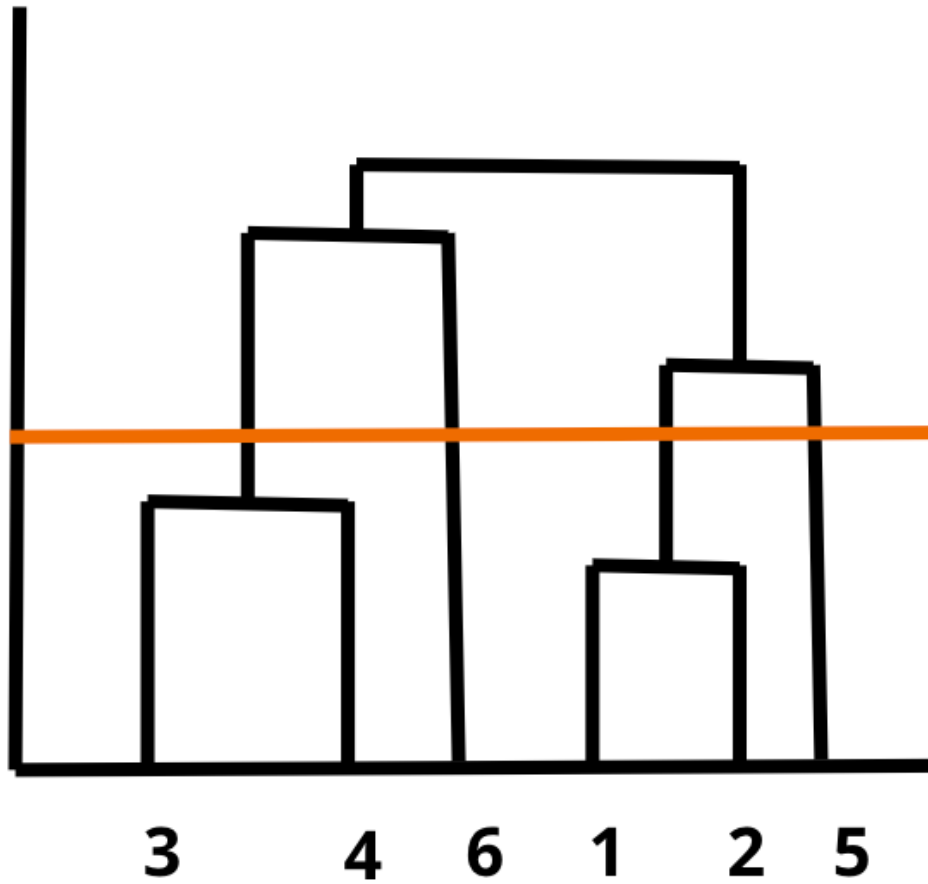


☐ False



✗ how many clusters are created by cutting the dendrogram below as follows

*0/1



- ☐ 1
- ☒ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7

✗



Correct answer

- ✓ Using Euclidean and Complete-Link Distances, what is the merging order ^{*1/1} of the following dataset?

Distance Matrix

	A	B	C	D
A	0	$\sqrt{2}$	3	2
B	$\sqrt{2}$	0	$\sqrt{5}$	$\sqrt{10}$
C	3	$\sqrt{5}$	0	$\sqrt{13}$
D	2	$\sqrt{10}$	$\sqrt{13}$	0

- ☐ AB → ABD → ABCD
☒ AB → ABC → ABCD
☐ AB → CD → ABCD
☐ CD → AB → ABCD
☐ CD → ACD → ABCD



✗ If there are 10 noise points when $\text{min_pts}=5$ and $\text{epsilon}=1$, there will necessarily be 10 or more noise points if $\text{min_pts}=10$ and $\text{epsilon}=.5$

*0/1

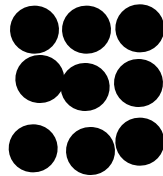
☐ True

☒ False

✗

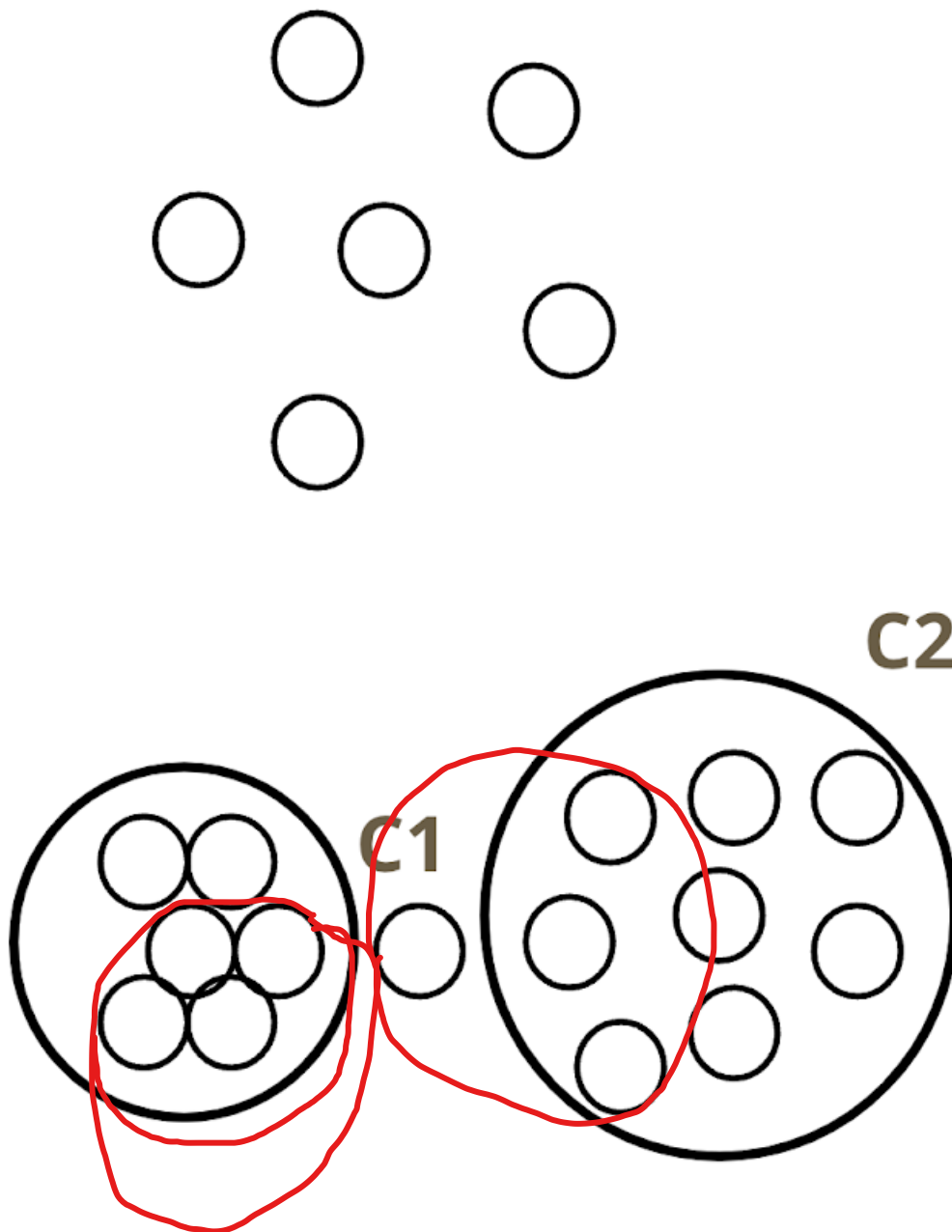
Correct answer

☒ True



✓ Is the following a possible output from DBScan? *

1/1



☐ Yes

☒ No



✗ Since outliers (points very far away from the rest of the dataset) most likely don't belong to any cluster, the probabilities assigned to them by GMM are all small.

*0/1

☒ True

☐ False

✗

Correct answer

☒ False

✓ How many parameters does GMM need to estimate? *

1/1

☐ k

☐ 2k

☒ 3k

☐ k^2

✓

✓ The goal in GMM clustering is to find the parameters of the GMM that make the data we observed as likely as possible.

*1/1

☒ True

☐ False

✓



✓ What is the disagreement distance between these two clustering? *

1/1

	P	C
x_1	1	1
x_2	1	2
x_3	2	1
x_4	3	3
x_5	3	4

☒ 3

☐ 4

☐ 5



✗ The maximum disagreement between two clusterings for a dataset of that size is: *0/1

- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☒ Impossible to tell



Correct answer

- ☒ 10

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