Unit 7: Quiz

Due Mar 30 at 11:59pm **Points** 5 **Questions** 5
Available until Mar 31 at 2:59am **Time Limit** 60 Minutes

This quiz was locked Mar 31 at 2:59am.

Attempt History

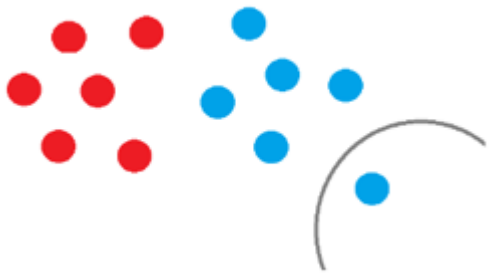
	Attempt	Time	Score
LATEST	Attempt 1	2 minutes	5 out of 5

Score for this quiz: **5** out of 5
Submitted Mar 29 at 5:56pm
This attempt took 2 minutes.

Question 1

1 / 1 pts

Which algorithm would we use to get the decision boundary shown in the following figure?



- MinMaxCut
- MinCut

Correct!

- RatioCut
- Ncut

Question 2

1 / 1 pts

Which of the following approach considers both inter-cluster and intra-cluster similarity? (select all that apply)

- [ ] MinCut
- [x] MinMaxCut — Correct!
- [ ] RatioCut
- [x] Ncut — Correct!

Ncut also consider intra similarity because when the objective function encourages Vol(A) and Vol(B) to be large. In such case it encourages the bonding within each cluster to be strong.

Question 3

1 / 1 pts

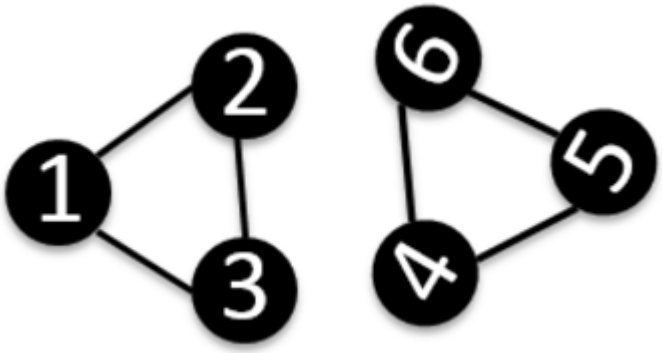
Using 2-way partitioning recursively to get k-way partition is inefficient and may cause stability issues.

- (•) True — Correct!
- ( ) False

Question 4

1 / 1 pts

Given a graph with 6 nodes (i.e., data points) in the following figure, we want to run the spectral clustering for MinCut to find two clusters.



Which of following is the ***Laplacian*** matrix?

[2,0,0,0,0,0;
0,2,0,0,0,0;
0,0,2,0,0,0;
0,0,0,2,0,0;
0,0,0,0,2,0;
0,0,0,0,0,2];

Correct!

[2,-1,-1,0,0,0;
-1,2,-1,0,0,0;
-1,-1,2,0,0,0;
0,0,0,2,-1,-1;
0,0,0,-1,2,-1;
0,0,0,-1,-1,2];

[2,1,1,0,0,0;
1,2,1,0,0,0;
1,1,2,0,0,0;
0,0,0,2,1,1;
0,0,0,1,2,1;
0,0,0,1,1,2];

[0,1,1,0,0,0;

1,0,1,0,0,0;

1,1,0,0,0,0;

0,0,0,0,1,1;

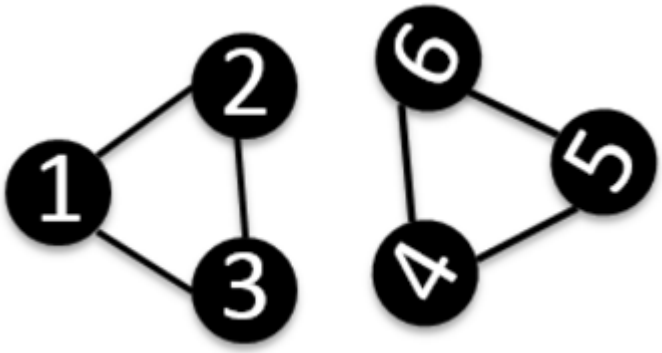
0,0,0,1,0,1;

0,0,0,1,1,0];

Question 5

1 / 1 pts

Given a graph with 6 nodes (i.e., data points) in the following figure, we want to run the spectral clustering for MinCut to find two clusters.



What is the cut size?

1

3

Correct!

0

2

In an unweighted undirected **graph**, the **size** or weight of a **cut** is the number of edges crossing the **cut**. In a weighted **graph**, the value or weight is defined by the sum of the weights of the edges crossing the **cut**

Quiz Score: **5** out of 5