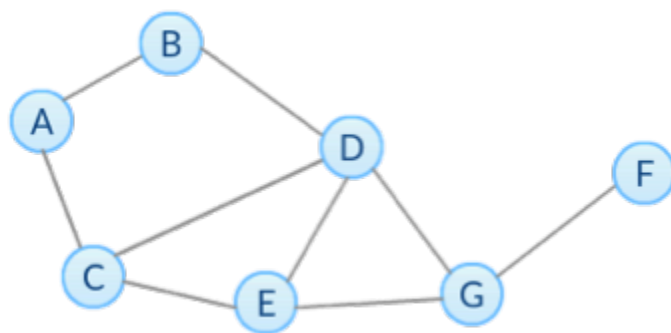# Module 3 Quiz

Quiz, 10 questions

<table><tr><td>1
point</td></tr></table>

1.

Based on the network below, what is the degree centrality of node D?
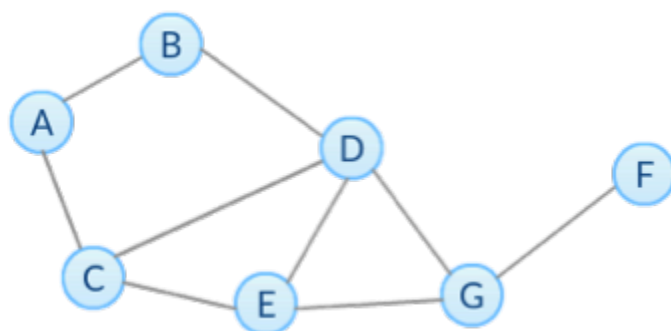

- ● 0.67
- ○ 0.50
- ○ 0.42
- ○ 0.57

1 point

2.

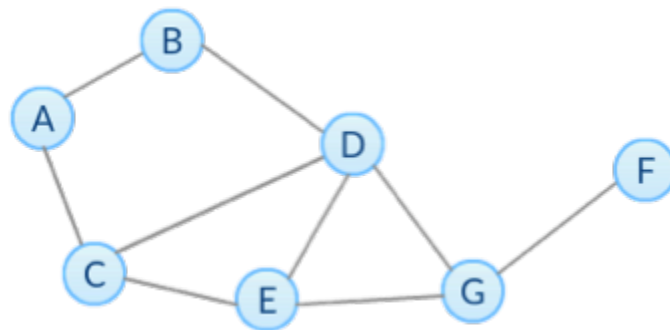Based on the network below, what is the closeness centrality of node G?

- ○ 0.75
- ○ 0.875
- ● 0.6
- ○ 0.7

1 point

3.

Based on the network below, what is the normalized betweenness centrality (excluding endpoints) of node G?
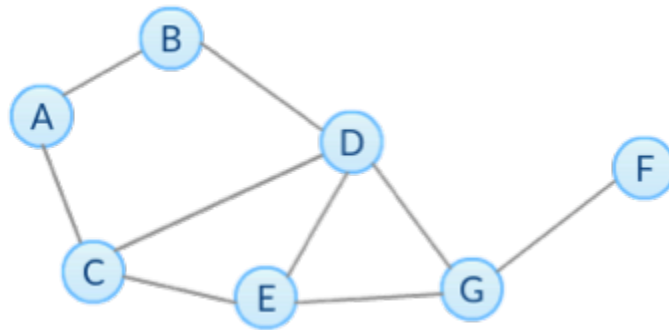
○ 0.24

○ 0.67

● 0.33

○ 0.47

| 1 |
| point |

4.

Based on the network below, what is the betweenness centrality without normalization of edge (G,F)?

- ○ 4
- ○ 5
- ● 6
- ○ 7

1
point

5.

Select all True statements.

- ☑ The node with highest betwenness centrality in a network also has the highest closeness centrality.

- ☑ The assumption of degree centrality is that important nodes have more connections.

- ☑ The closeness centrality of a node describes how far the node is from others.

Module 3 Quiz

☐ In directed networks, in-degree and out-degree centrality of a node are always the same.

☑ We can use subsets of node-pairs to approximate betweenness centrality.

1
point

6.

Select all True statements about Page Rank (PR) and HITS in directed networks.

☑ Nodes with high in-degree centrality have higher PRs than nodes with low in-degree centrality.

☑ Nodes that have outgoing edges to good hubs are good authorities, and nodes that have incoming edges from good authorities are good hubs.

☐ Adding out-links of a node will always decrease its PR.

☑ Adding in-links of a node will never decrease its PR.

☑ The authority and hub score of each node is obtained by computing multiple iterations of HITS algorithm and both scores of most networks are convergent.

1
point

7.

Given the network below, which value of alpha (damping parameter) listed below in the NetworkX function pagerank maximizes the PageRank of node D?

- ● 0.95

- ○ 0.5

- ○ 0.9

- ○ 0.8

1
point

8.
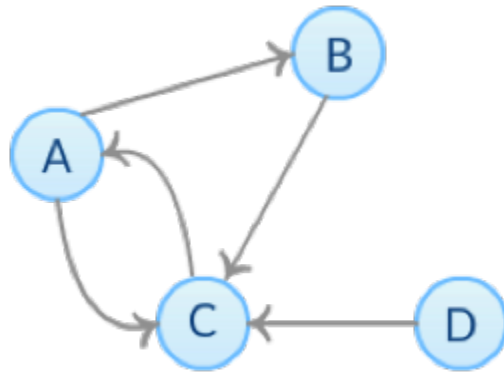
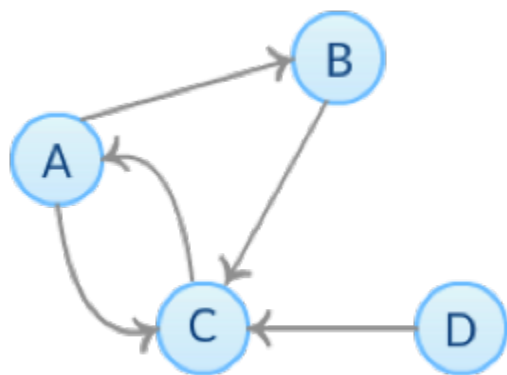Based on the network below, what is the basic PR of node C at step k = 1?

- ○ 0.125
- ● 0.625
- ○ 0.5
- ○ 0.375
- ○ 0.25

1
point

Module 3 Quiz

Based on the network below, what are the corresponding normalized authority and hub scores of node C correspondingly after two iterations of HITS algorithm?

- ● 0.57, 0.09

- ○ 0.4, 0.4

- ○ 0.33, 0.33

- ○ 0.8, 0.2

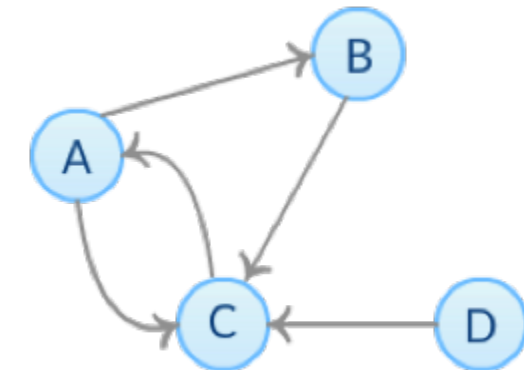| 1 |
|---|
| point |

10.

Based on the network below, which of the following is NOT True?
Check all that apply.

- ☐ Node D's basic PR at step k (k>=1) is always 0.

- ☑ At each step, the sum of all nodes' basic PR is always 1.

- ☐ At step k (k>=1), node A's basic PR is always the same as node C's basic PR at step k-1.

- ☑ Node D's authority and hub score after k iterations (k>=1) are always 0.

☑ I, **Varun Varun**, 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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Module 3 Quiz

Quiz, 10 questions