

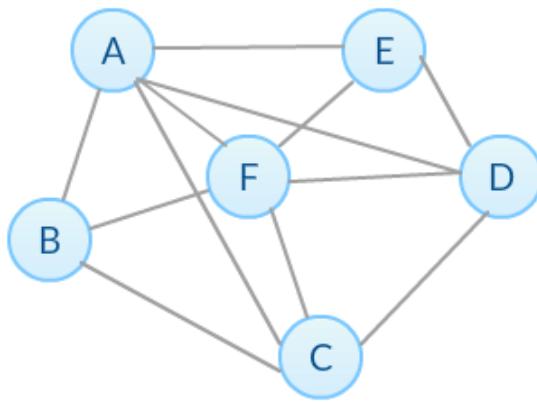
## Module 2 Quiz

Quiz, 10 questions

1  
point

1.

Consider the given network. What is the value of node F's local clustering coefficient?



0.5

0.6

0.7

0.8

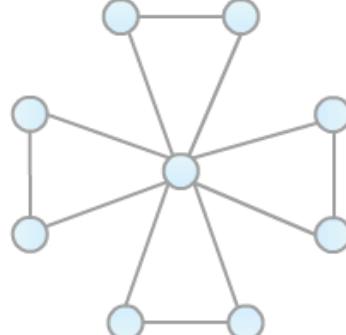
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2.

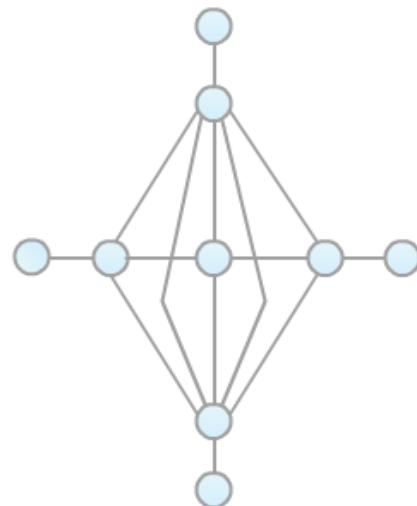
Given the following two networks, which of the following is True?

## Module 2 Quiz

Quiz, 10 questions



(A)



(B)

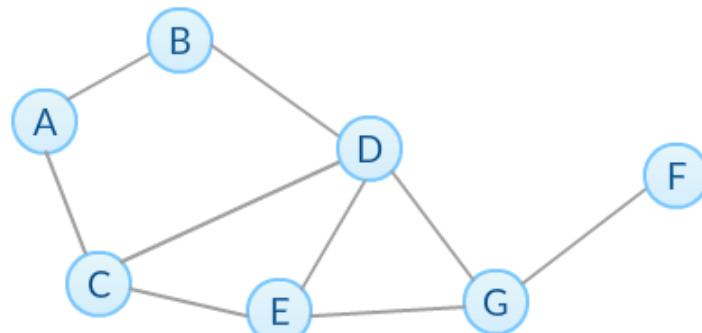
- Network (A) has higher average local clustering coefficient and higher transitivity than (B).
- Network (A) has higher average local clustering coefficient but lower transitivity than (B).
- Network (A) has lower average local clustering coefficient and lower transitivity than (B).
- Network (A) has lower average local clustering coefficient but higher transitivity than (B).

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1 point

3.

Consider the network shown below and select all that apply.





The radius of this network is half of its diameter.

## Module 2 Quiz

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The deletion of node G will make the network disconnected.



Node C and D are in the center of the network.



F is the only one in the periphery of the network.

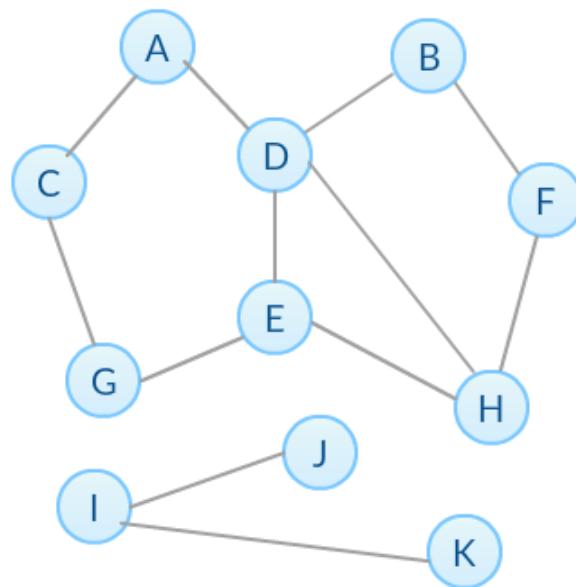


The eccentricity of node B and C are equal.

1  
point

4.

Select all that apply for the network below.



It is a disconnected graph with 2 connected components.



If edge (E,G) is removed, the number of connected components will not change.



The local clustering coefficient of node I is higher than node J and K.



We can make the graph connected by adding edge (E,J).

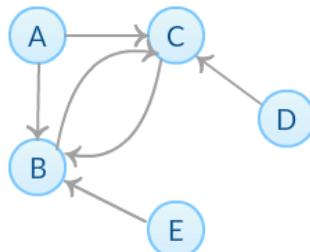
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5.

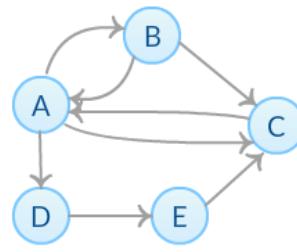
Consider three networks (A), (B) and (C) below and select all that apply.

## Module 2 Quiz

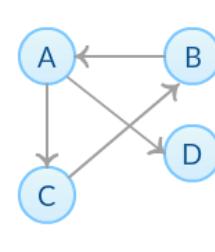
Quiz, 10 questions



(A)



(B)



(C)

- Only network (B) is a strongly connected graph.
- We can change network (A) from a weakly connected graph to a strongly connected graph by adding a directed edge from node C to node D.
- All edges in network (B) are needed for the network to be strongly connected.
- We only need to add one directed edge in order to change network (C) to a strongly connected graph.

1  
point

6.

Which of the following is true about network robustness and connectivity? Select all that apply.

- The closure of an airport and the cancellation of a flight route are examples of two different kinds of network attacks in the real world.
- Adding more edges to a network always makes it more robust.
- A network that has a high average local clustering coefficient always has a high node connectivity.
- Network robustness measures a network's ability to maintain its connectivity.
- Adding edges to a network can never make the network less robust.

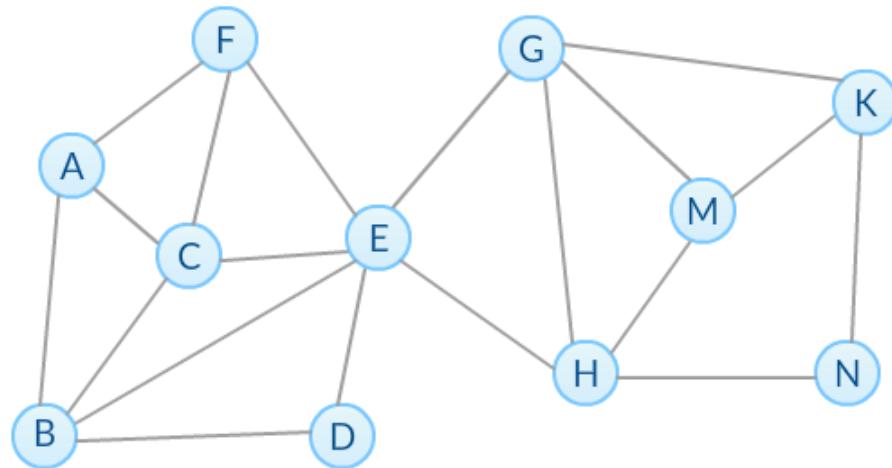
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point

7.

Consider the network given below.

## Module 2 Quiz

Quiz, 10 questions



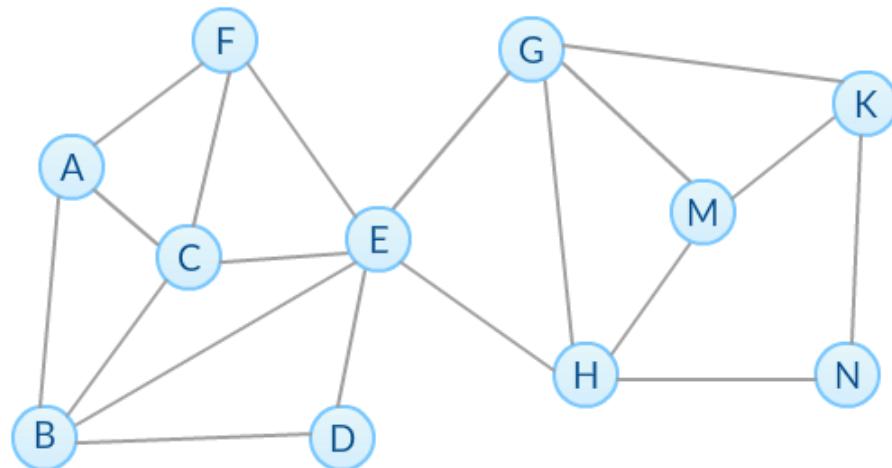
What's the node connectivity of the network?

- 1
- 2
- 3
- 4

1  
point

8.

Consider the network given below.



What is the edge connectivity of the network?

- 1
- 2

3

## Module 2 Quiz

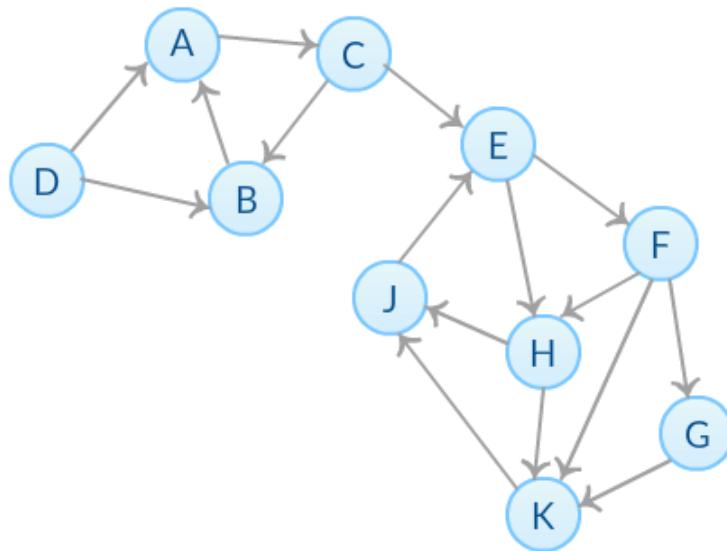
 4

Quiz, 10 questions

1 point
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9.

The directed network below shows how information can be transferred between nodes. For example, node A can pass the information to node C directly but not vice-versa. If node C wants to send messages to node A, all data must be forwarded by node B.



What is the total number of simple paths from node D to node K?

 5 6 7 8 9

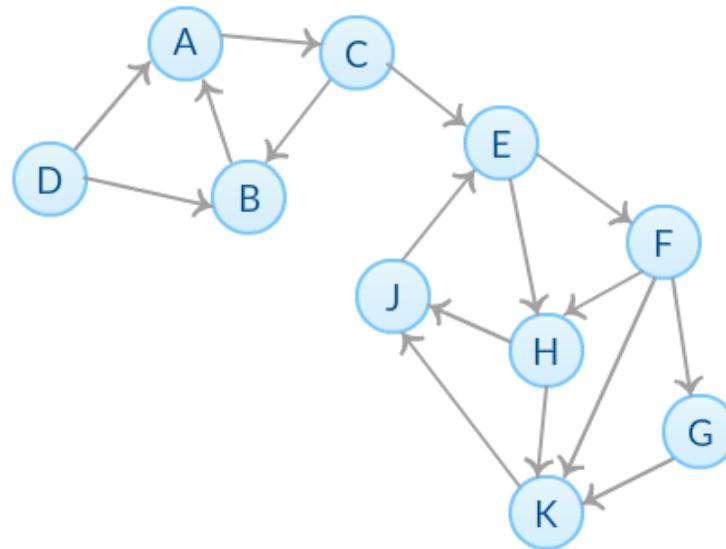
1 point
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10.

The directed network below shows how information can be transferred between nodes. For example, node A can pass the information to node C directly but not vice-versa.

## Module 2 Quiz

Quiz, 10 questions



Suppose we want to block all information channels from node E to node K. Which of the following options achieve this goal? Check all that apply.

- Removing node H only
- Removing node G and H
- Removing node F and H
- Removing edge (H,K)
- Removing edges (H,K) and (E,F)
- Removing edges (H,K) and (F,G)



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