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Feedback — Module 3 Technical problem set

Help

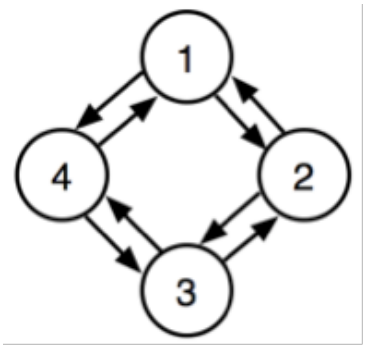
You submitted this quiz on **Fri 10 Oct 2014 5:34 PM PDT**. You got a score of **9.00** out of **10.00**.

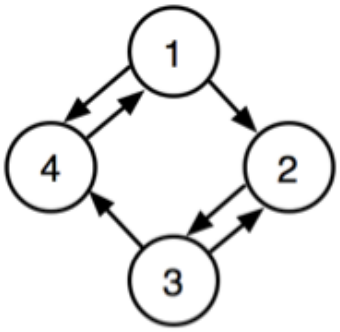
Question 1

Given a screenshot from Google Maps (maps.google.com) below:

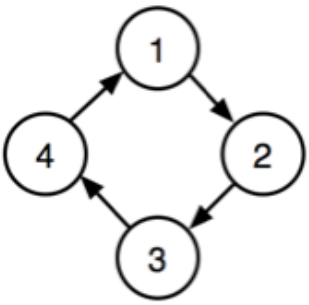
Which of the following graphs models above road network?

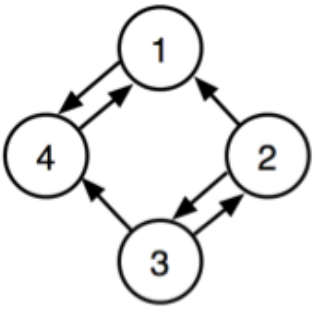
Your Answer	Score	Explanation





✔ 1.00





Total 1.00 / 1.00

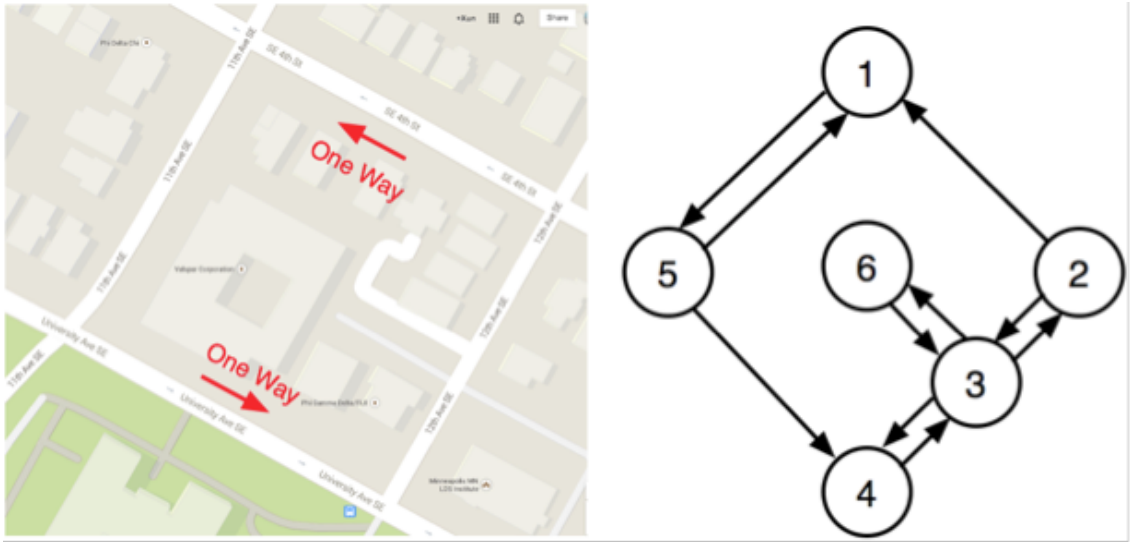
Question 2

Which of following are approaches to model turns in roadmaps?

Your Answer		Score	Explanation
Model turns as a sequence of road segments			
Use hyper-edges (and hyper-graphs)			
Annotate graph node with turn information			
All of the above	✔	1.00	
Total		1.00 / 1.00	

Question 3

Some of the following questions use the figure shown below, the left side is a screenshot from Google Maps (maps.google.com), the right side is a directed graph G that models the screenshot.



Which edges does transitive closure of graph G have?

Your Answer		Score	Explanation
(1, 2), (1, 3), (1, 4), (1, 5), (1, 6), (2, 1), (2, 3), (2, 4), (2, 5), (2, 6), (3, 1), (3, 2), (3, 4), (3, 5), (3, 6), (4, 1), (4, 2), (4, 3), (4, 5), (4, 6), (5, 1), (5, 2), (5, 3), (5, 4), (5, 6), (6, 1), (6, 2), (6, 3),	✔	1.00	

(6, 4), (6, 5)

- (1, 5), (5, 4), (4, 3), (3, 2), (2, 1)
- (1, 2), (1, 3), (1, 4), (1, 5), (1, 6)
- (1, 5), (5, 1), (2, 1)

Total	1.00 / 1.00

Question 4

Consider the following table R:

R

SOURCE	DEST
1	2
1	3
2	3
3	4
3	5

What will the following SQL statement return?

SQL statement:

```
SELECT *
FROM R
CONNECT BY PRIOR source = dest
START WITH dest = 3
```

Your Answer	Score	Explanation

SOURCE	DEST
1	2
2	3

✔ 1.00

SOURCE	DEST
1	2
1	3
2	3

SOURCE	DEST
1	2
1	3
2	3
3	4
3	5
1	4
1	5
2	4
2	5

Total 1.00 / 1.00

Question 5

Consider the following table R:

R

SOURCE	DEST
1	2
1	3
2	3
3	4
3	5

What will the following SQL statement return?

SQL statement:

```
WITH RECURSIVE X(source, dest)
AS (SELECT source, dest FROM R)
        UNION
    (SELECT R.source, X.dest)
    FROM R, X
    WHERE R.dest = X.source
```

Your Answer		Score	Explanation
○			

SOURCE	DEST
1	2
1	3
1	4
1	5

●	✔	1.00	

SOURCE	DEST

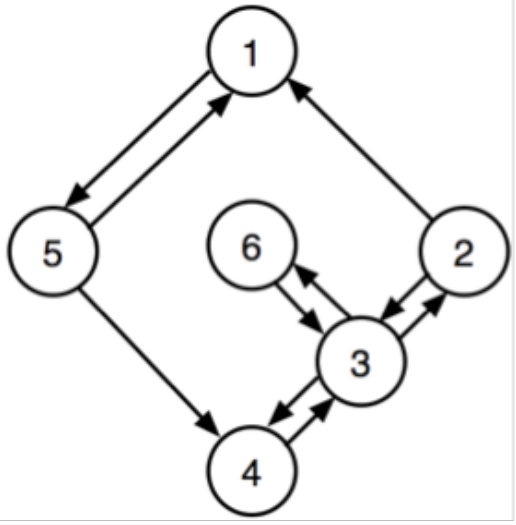
1	2
1	3
2	3
3	4
3	5
1	4
1	5
2	4
2	5

SOURCE	DEST
1	2
1	3
2	3
3	4
3	5
1	4
1	5

Total 1.00 / 1.00

Question 6

Which adjacency matrix represents graph G?



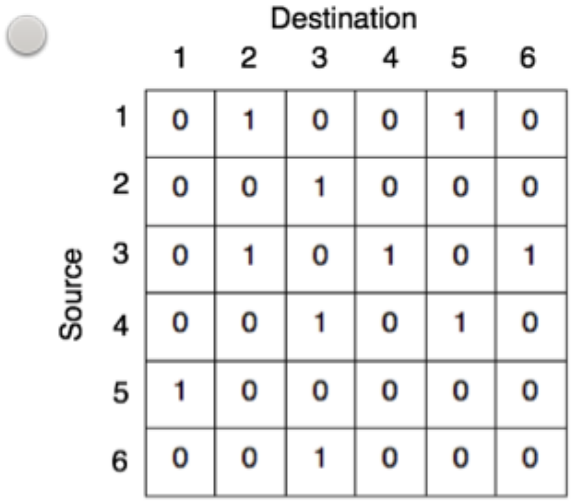
Your Answer	Score	Explanation

(●) ✔ 1.00

Source \ Destination	1	2	3	4	5	6
1	0	0	0	0	1	0
2	1	0	1	0	0	0
3	0	1	0	1	0	1
4	0	0	1	0	0	0
5	1	0	0	1	0	0
6	0	0	1	0	0	0

( )

Source \ Destination	1	2	3	4	5	6
1	0	1	0	0	1	0
2	1	0	1	0	0	0
3	0	1	0	1	0	1
4	0	0	1	0	1	0
5	1	0	0	1	0	0
6	0	0	1	0	0	0



Source \ Destination	1	2	3	4	5	6
1	0	1	0	0	1	0
2	0	0	1	0	0	0
3	0	1	0	1	0	1
4	0	0	1	0	1	0
5	1	0	0	0	0	0
6	0	0	1	0	0	0

Total 1.00 / 1.00

Question 7

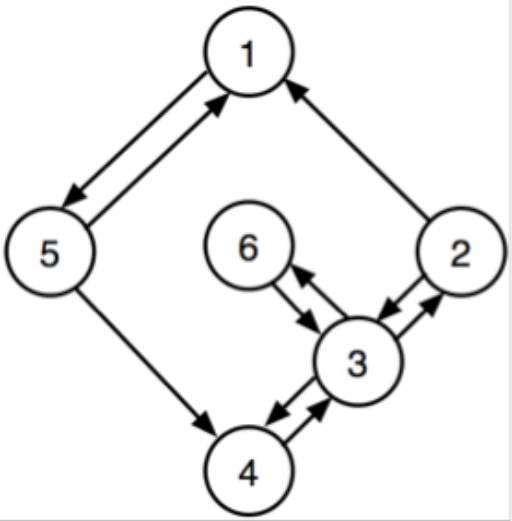
Given a directed graph represented by the following adjacency matrix, which edge is not in its transitive closure?

Source \ Destination	1	2	3	4	5	6
1	0	1	1	1	0	0
2	0	0	1	0	1	0
3	0	0	0	0	0	1
4	0	0	0	0	0	1
5	0	1	0	0	0	0
6	0	0	0	0	0	0

Your Answer		Score	Explanation
(1, 6)			
(5, 3)			
(4, 5)	✔	1.00	
(5, 6)			
Total		1.00 / 1.00	

Question 8

For graph G, how many edges are cut if a disk-page contains Node 1, Node 4, and Node 5, while the other disk-page contains Node 2, Node 3, and Node 6?

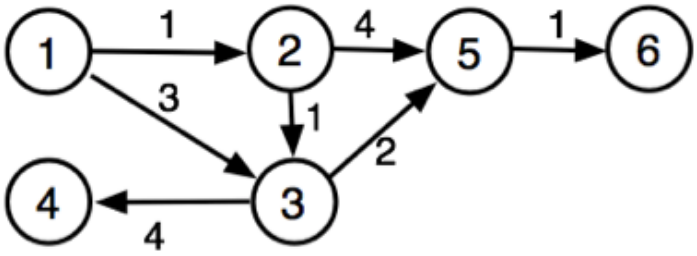


Your Answer	Score	Explanation
2		
1		
3		

4	✖	0.00
Total		0.00 / 1.00

Question 9

Given the following weighted graph:

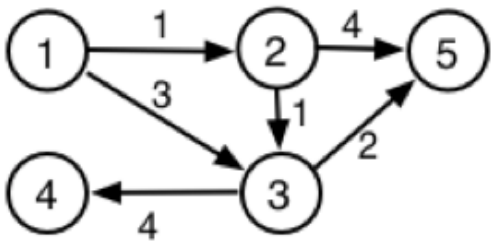


Which node is not expanded by Dijkstra's algorithm in computing shortest path from Node 1 to Node 5?

Your Answer		Score	Explanation
4			
6	✔	1.00	
3			
2			
Total		1.00 / 1.00	

Question 10

Given the following weighted graph:



Which is the shortest path from Node 1 to Node 5?

Your Answer		Score	Explanation
○ Node 1 -> Node 3 -> Node 2 -> Node 5			
○ Node 1 -> Node 3 -> Node 5			
○ Node 1 -> Node 2 -> Node 5			
◉ Node 1 -> Node 2 -> Node 3 -> Node 5	✔	1.00	
Total		1.00 / 1.00	