Comparing representations

6 questions | 14 marks

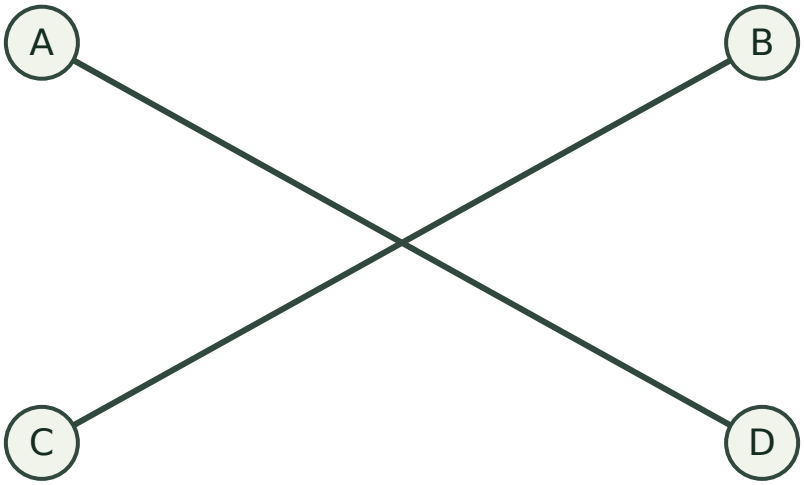
Equivalent correct methods earn the corresponding marks.

1. A diagram is redrawn with all vertices moved but the same labelled edge set. Has the network changed? [2 marks]

The direct relationships are unchanged.

Answer: No.

2. Count vertices and components in the crossing-edge diagram. [2 marks]



The crossing is unmarked.

The components are {A,D} and {B,C}.

Answer: 4 vertices and 2 components.

3. An undirected table has row sums 2,3,1,2. Find the number of edges. [2 marks]

The sum is 8; half is 4.

Answer: 4.

4. P has AB, BC, CD, DA. Q has AC, CB, BD, DA. Are these the same labelled network? [3 marks]

AB occurs only in P.

All degrees are 2 in each network, so matching degrees alone is insufficient.

Answer: No.

5. Stations move farther apart on a non-scale diagram. Can you infer longer travel time? [2 marks]

Page distances do not represent time unless that rule is stated.

Answer: No.

6. List edges from the table and say whether it is connected. [3 marks]

From / to	A	B	C	D
A	0	1	0	1
B	1	0	1	0
C	0	1	0	1
D	1	0	1	0

The edges form A-B-C-D-A.

Answer: AB, AD, BC, CD; connected.