Drawing networks from situations

6 questions | 15 marks

Equivalent correct methods earn the corresponding marks.

1. Draw vertices A-D with edges AB, AC and CD. [3 marks]



Place all four vertices.

Join AB, AC and CD only.

Answer: Any drawing with exactly those vertices and three edges.

2. Do services AB and BC alone justify a direct edge AC? [2 marks]

They describe a two-edge journey, not a direct service.

Answer: No.

3. A connection table has rows and columns in the order A, B, C. Its rows are (0,1,1), (1,0,0), (1,0,0). List each undirected edge once. [2 marks]

Read above the diagonal only.

Answer: AB and AC.

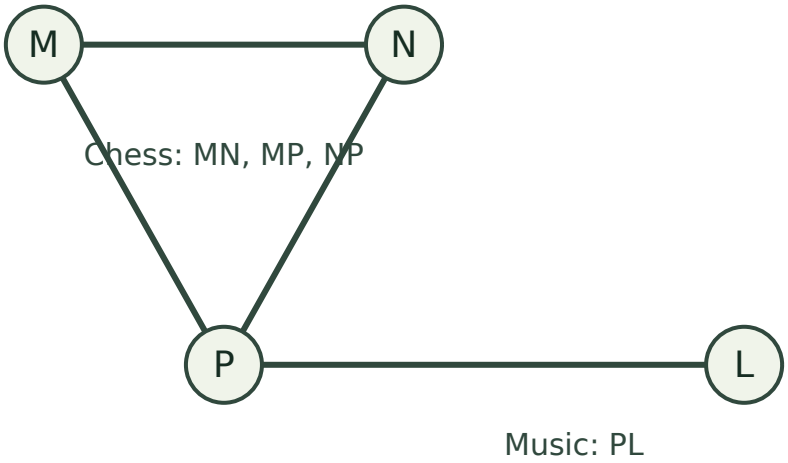
4. An undirected table has AB=1 and BA=0. Explain the problem. [3 marks]

A mutual link must appear in both positions.

Correct an entry or use a directed model.

Answer: It is not symmetric.

5. Mia, Noah and Priya share chess; Priya and Leo share music. Draw an edge for each pair sharing a club. [3 marks]



Chess makes three pairs.

Music adds PL.

Answer: MN, MP, NP and PL.

6. A model includes six towns, two without roads. A student draws four vertices. What is missing? [2 marks]

The vertex set must include every stated town.

Answer: Two isolated town vertices.