# 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.

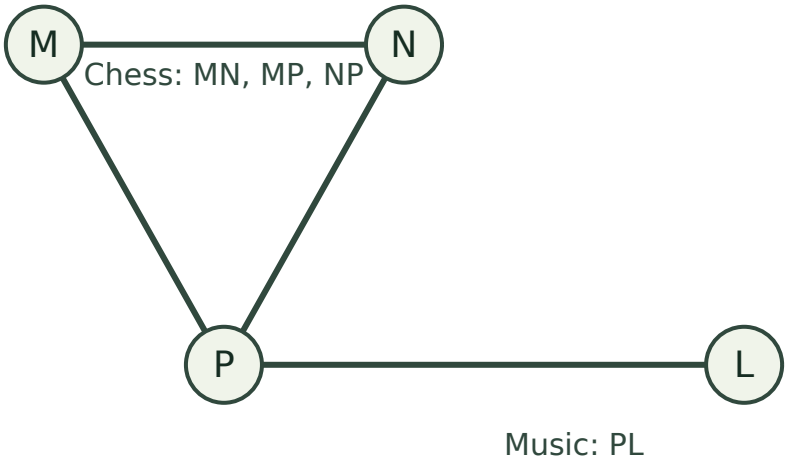
**4.** An undirected table has $AB = 1$ and $BA = 0$. Explain the problem. [3 marks]

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.