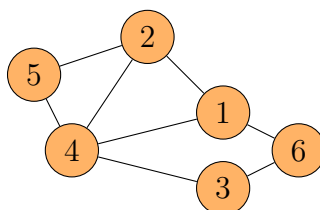# Exercise - 4: Graph neural networks

December 2, 2025

Questions

Q1. Draw the edge graph associated with the graph in figure.

Q2. Let a graph with 4 nodes (nodes numbered 1,2,3,4). Write the permutation matrix P (4×4) that implements the reordering with new order as (3,1,4,2).

Q3. Let a graph with 4 nodes have adjacency matrix A (nodes numbered 1,2,3,4) given

by $\begin{bmatrix} 0 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \\ 1 & 1 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$.

Compute the adjacency matrix after permuting it with permutation matrix P from the previous question.

Hint

Instructions

- Show all necessary steps clearly.