

GRAPH THEORY

1. Given the directed graph with vertices A, B, C, D, and E and directed edges AB, AC, AD, BA, CD, EA, EC, CE, BD, and BE. How many pairs of vertices have no directed edge?
2. Given the directed graph with vertices A, B, C, and D, and directed edges AB, BD, CD, AC, CB, CA, DA, and AD. Draw the adjacency matrix represented by the directed graph.
3. How many paths of length 2 exist in the following directed graph?
4. How many paths of length 3 exist in the following directed graph?