

GRAPH THEORY

Tutorial – 1

1) Prove or disprove:

The complement of a simple disconnected graph must be connected.

2) Let v be a cut-vertex of a simple graph G . Prove that,

$[\text{complement}(G) - v]$ is connected.

- 3) Let P and Q be paths of maximum length in a connected graph G .
Prove that, P and Q have a common vertex.
- 4) Prove that, every connected simple graph with an even number of edges decomposes into paths of length 2.