

Tutorial 5.B

Advanced Graph Theory

28th August 2014

1. Count the number of spanning trees in the following three graphs:



Figure: Graph 1

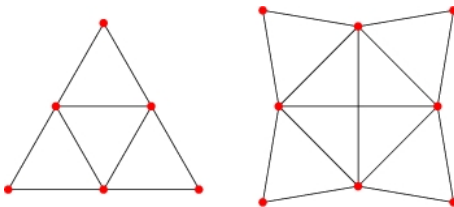


Figure: Graphs 2 and 3

2. Prove or Disprove:

- 2.1 Every Eulerian bipartite graph has an even number of edges.
- 2.2 Every Eulerian simple graph with an even number of vertices has an even number of edges.
- 2.3 If G is an Eulerian graph, and there are two edges e and f in G sharing a vertex, then G has a eulerian circuit in which e and f appear consecutively.

3. A connected, undirected multigraph has an Euler path but not an Euler circuit if and only if it has exactly two vertices of odd degree.
4. Arrange seven 0's and seven 1's cyclically so that the 14 strings of four consecutive bits are all the 4-digit binary strings other than 0101 and 1010.