Extra Exercises on Chapter 10

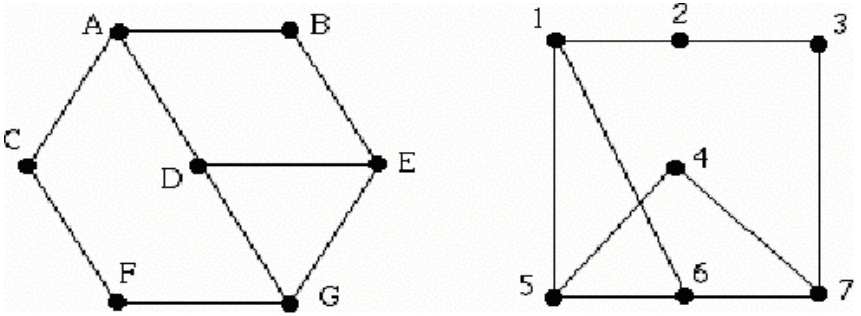
Ex. 1 A tournament is a simple directed graph such that if u and v are distinct vertices in the graph, exactly one of (*u*, *v*) and (*v*, *u*) is an edge of the graph. Assume all vertices are labeled, how many different tournaments with *n* vertices are there?

Ex. 2 If G is a planar connected graph with 20 vertices, each of degree 3, how many regions G has?

Extra Exercises on Chapter 10

Ex. 3 What is the length of the longest simple circuit in K5?

Ex. 4 Determine whether these two graphs are isomorphic, and justify your answer.

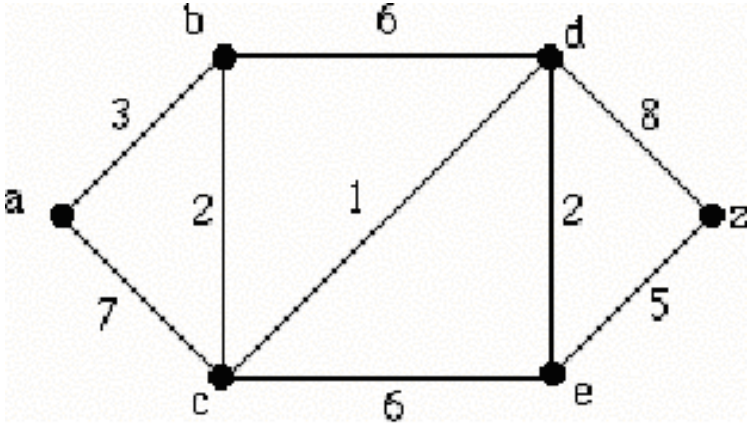


Extra Exercises on Chapter 10

Ex. 5 The Math Department has 6 committees that meet once a month. How many different meeting times must be used to guarantee that no one is scheduled to be at meetings at the same time, if committees and their members are: C1={Allen, Brooks, Marg}, C2={Brooks, Jones, Morton}, C3 ={Allen, Marg, Morton}, C4 ={Jones, Marg, Morton}, C5={Allen, Brooks}, C6 ={Brooks, Marg, Morton}.

Extra Exercises on Chapter 10

Ex. 6 Use Dijkstra's Algorithm to find the shortest path length between the vertices a and z in this weighted graph.



Extra Exercises on Chapter 10

Ex. 7 Determine the truth value of the statement "A bipartite graph with an odd number of vertices does not have a Hamilton circuit," and justify your answer.