Show All Solutions

Rosen, Discrete Mathematics and Its Applications, 6th edition
Extra Examples

Section 9.4—Connectivity

Extra Examples — *Page references correspond to locations of Extra Examples icons in the textbook.*

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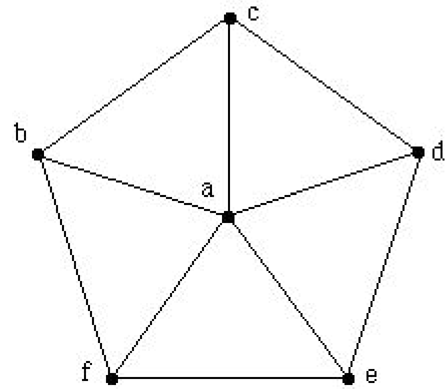
p.629, icon at Example 14

#1. Use powers of the adjacency matrix to find the following numbers of paths in this graph:

(a) paths from b to e of length 3.

(b) paths from a to c of length 5.

(c) paths from d to b of length 6.



See Solution

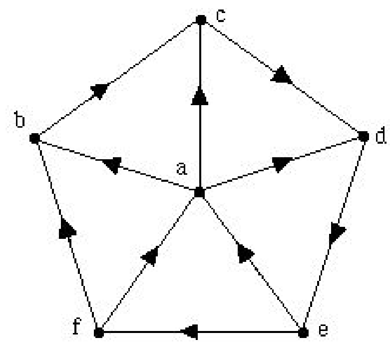
p.629, icon at Example 14

#2. Use powers of the adjacency matrix to find the following numbers of paths in this digraph:

(a) paths from e to c of length 3.

(b) paths from e to e of length 4.

(c) paths from f to b of length 6.



See Solution

p.629, icon at Example 14

#3. Let G be an undirected simple graph with n vertices and adjacency matrix A. Suppose G is drawn with straight lines, none of which cross, such that no three vertices are collinear. Let $A^3 = [b_{i,j}]$. Explain why

$$\frac{b_{1,1} + b_{2,2} + \cdots + b_{n,n}}{6} = \text{the number of triangles in the figure.}$$

See Solution