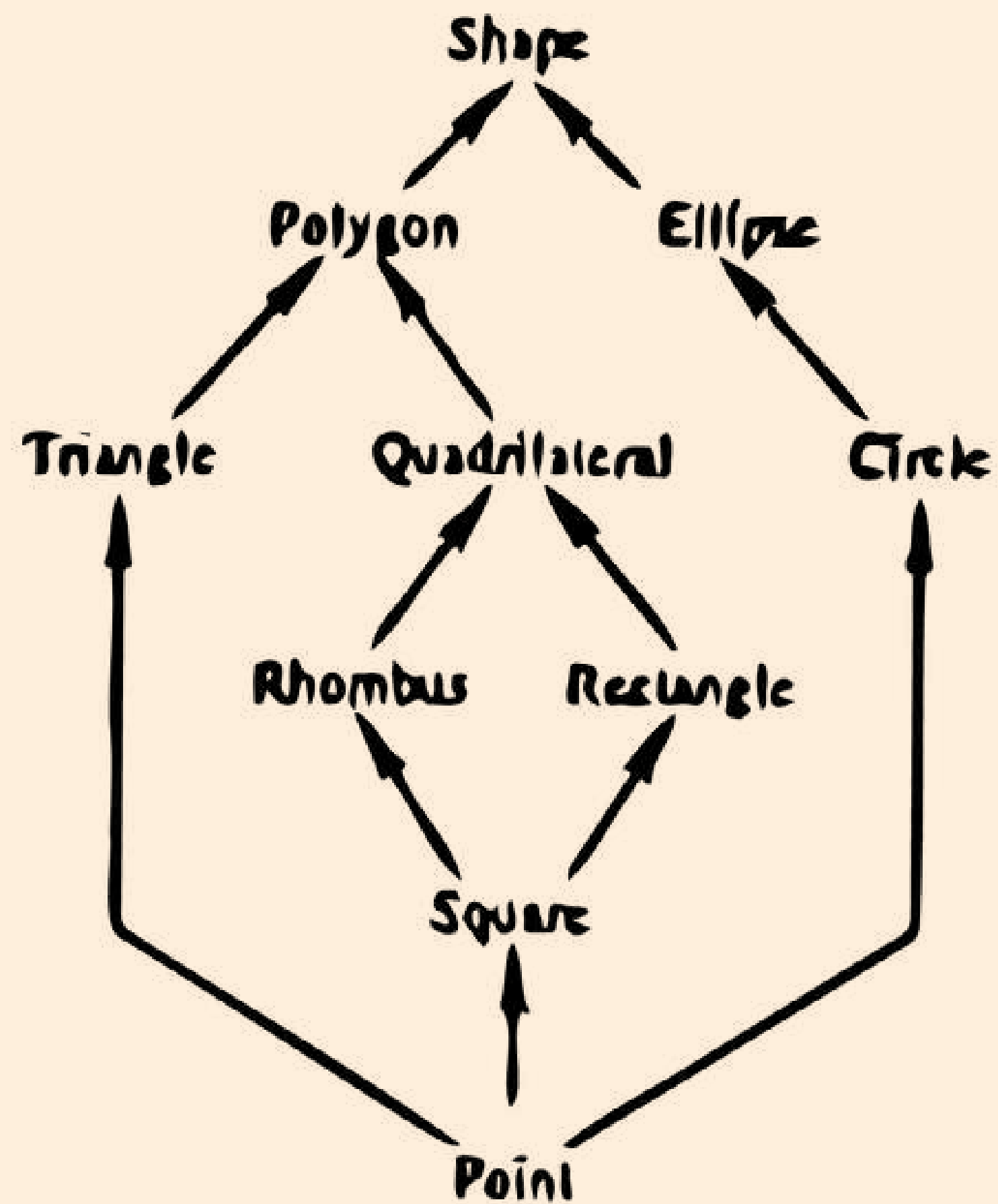
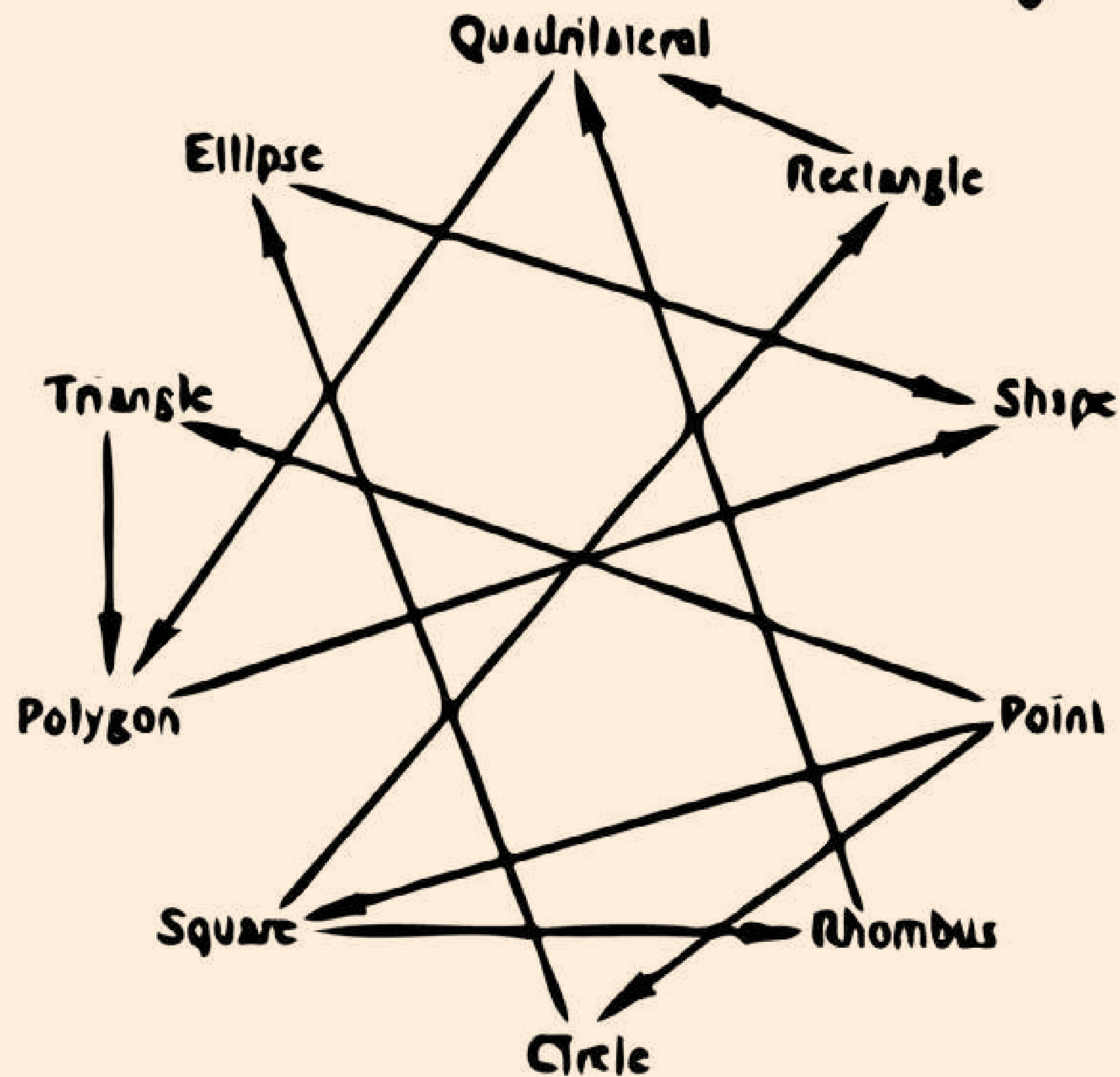


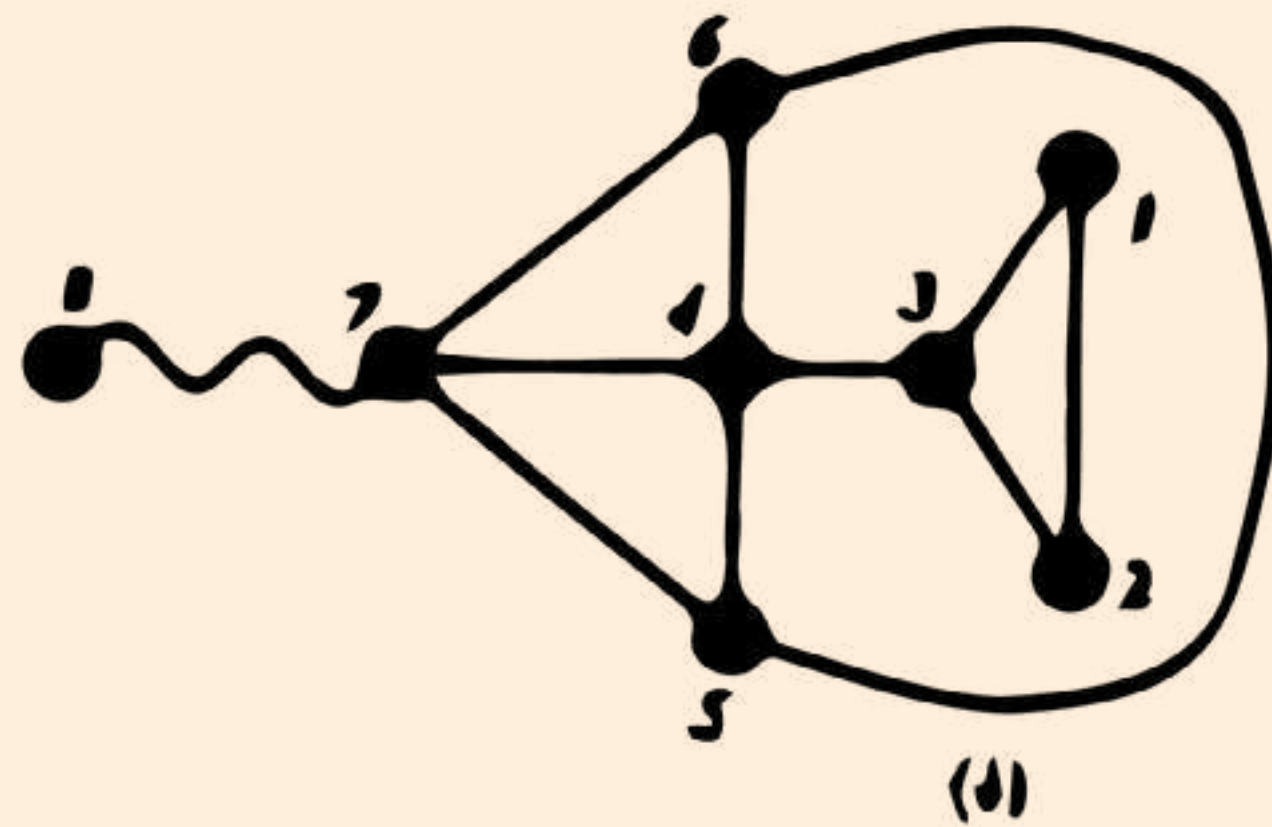
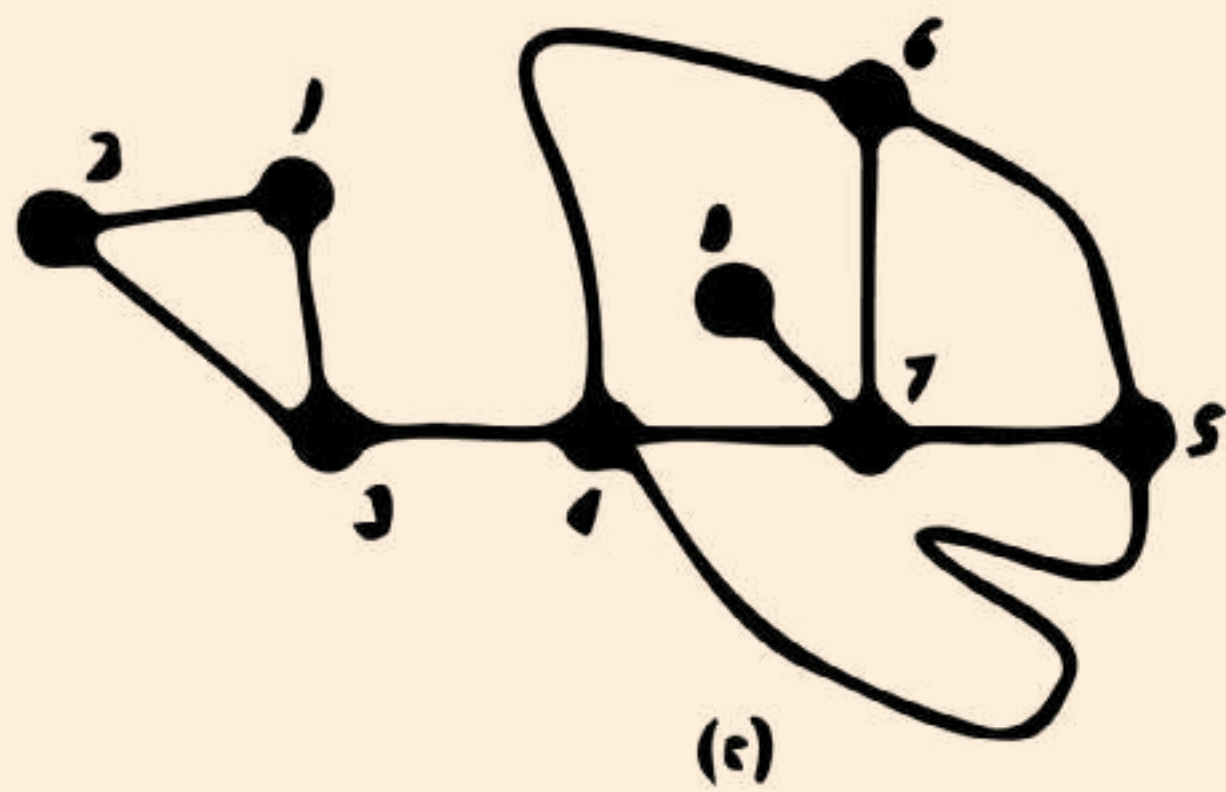
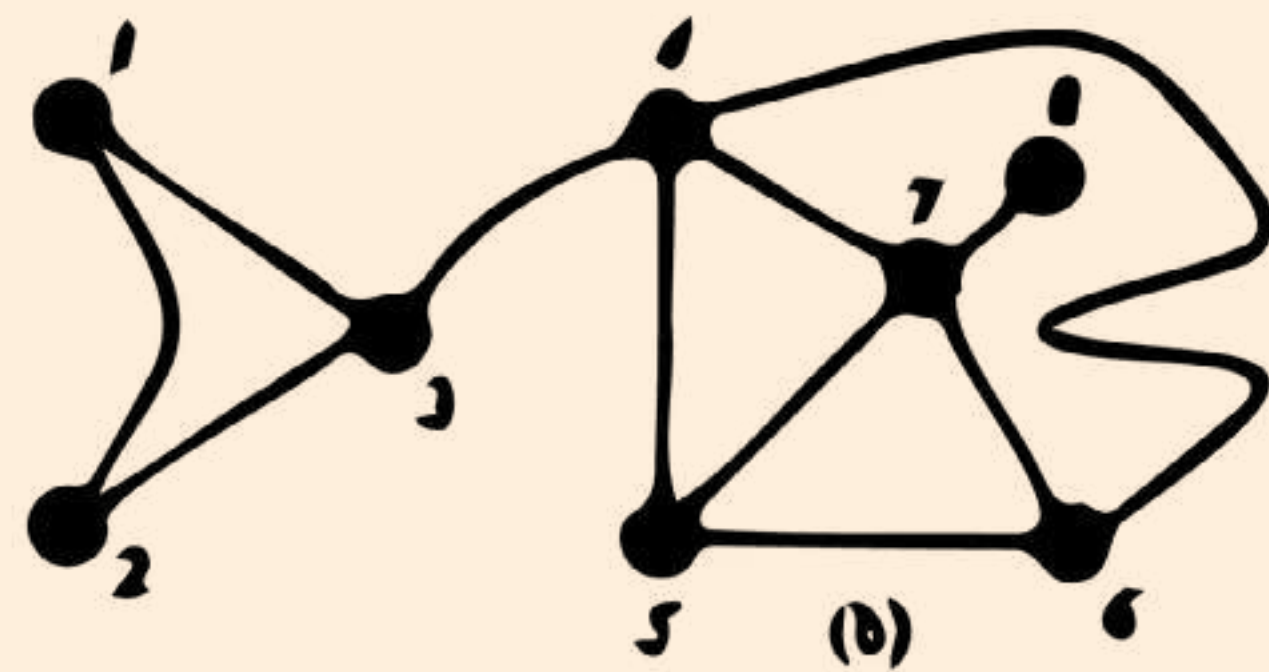
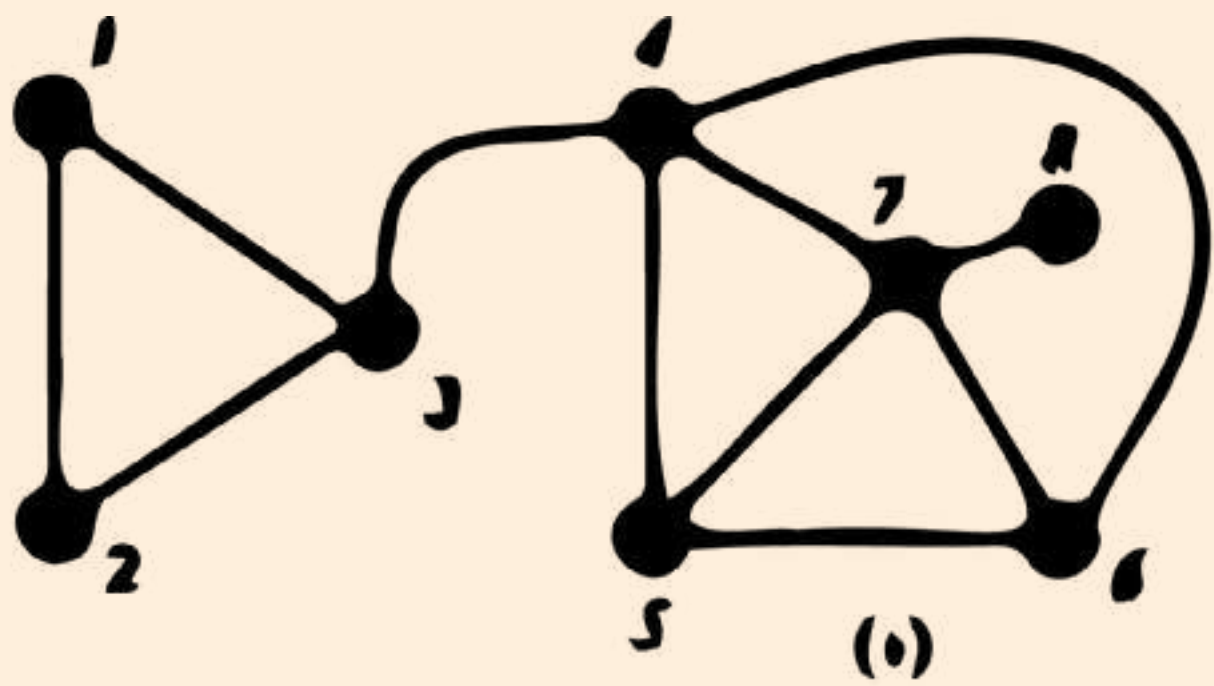
Network Diagrams

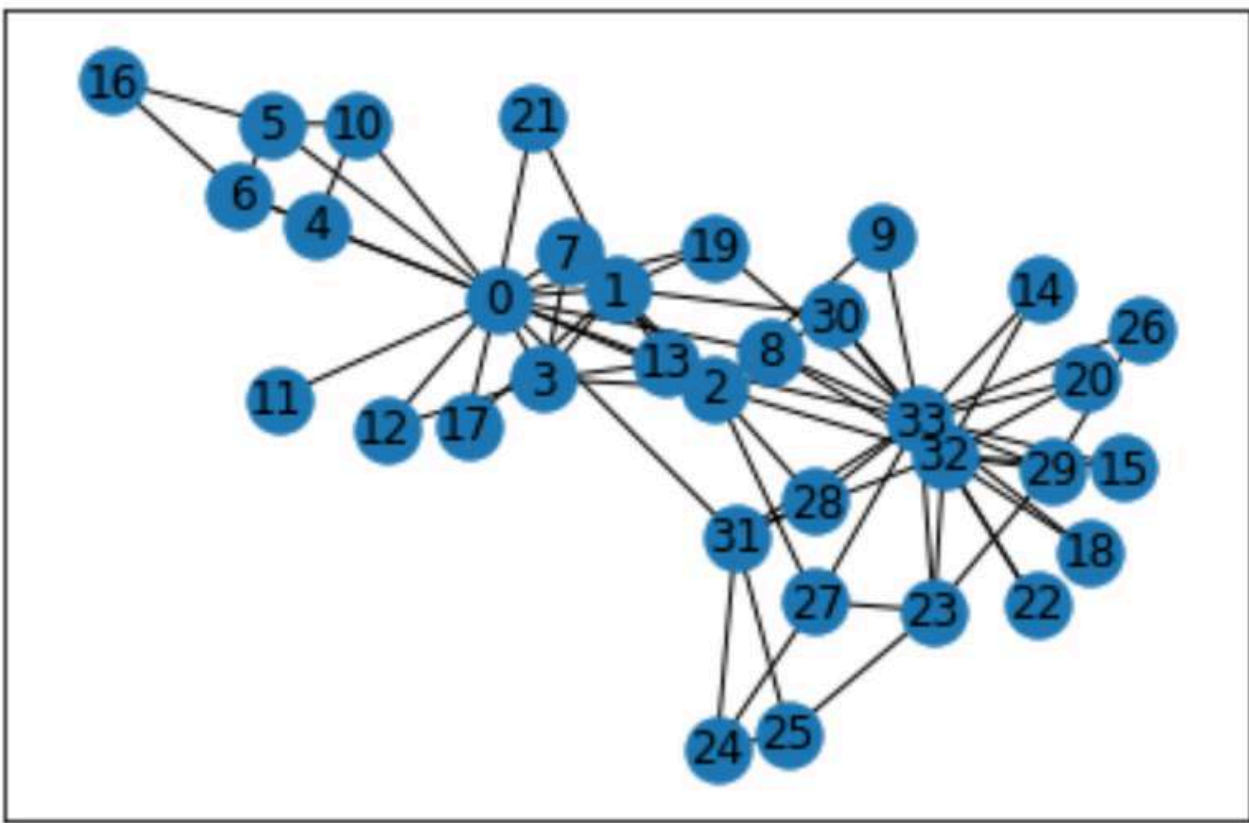
Graph/Relational Data Drawing

#2928

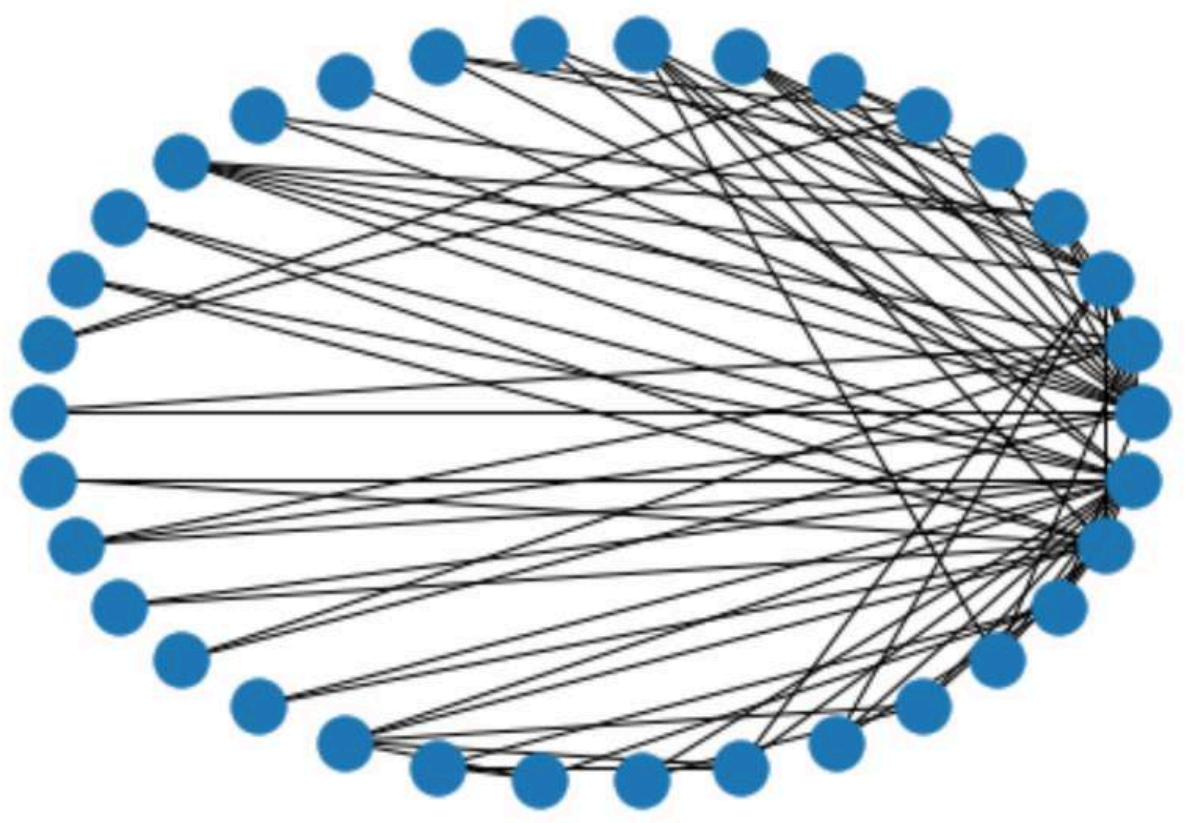




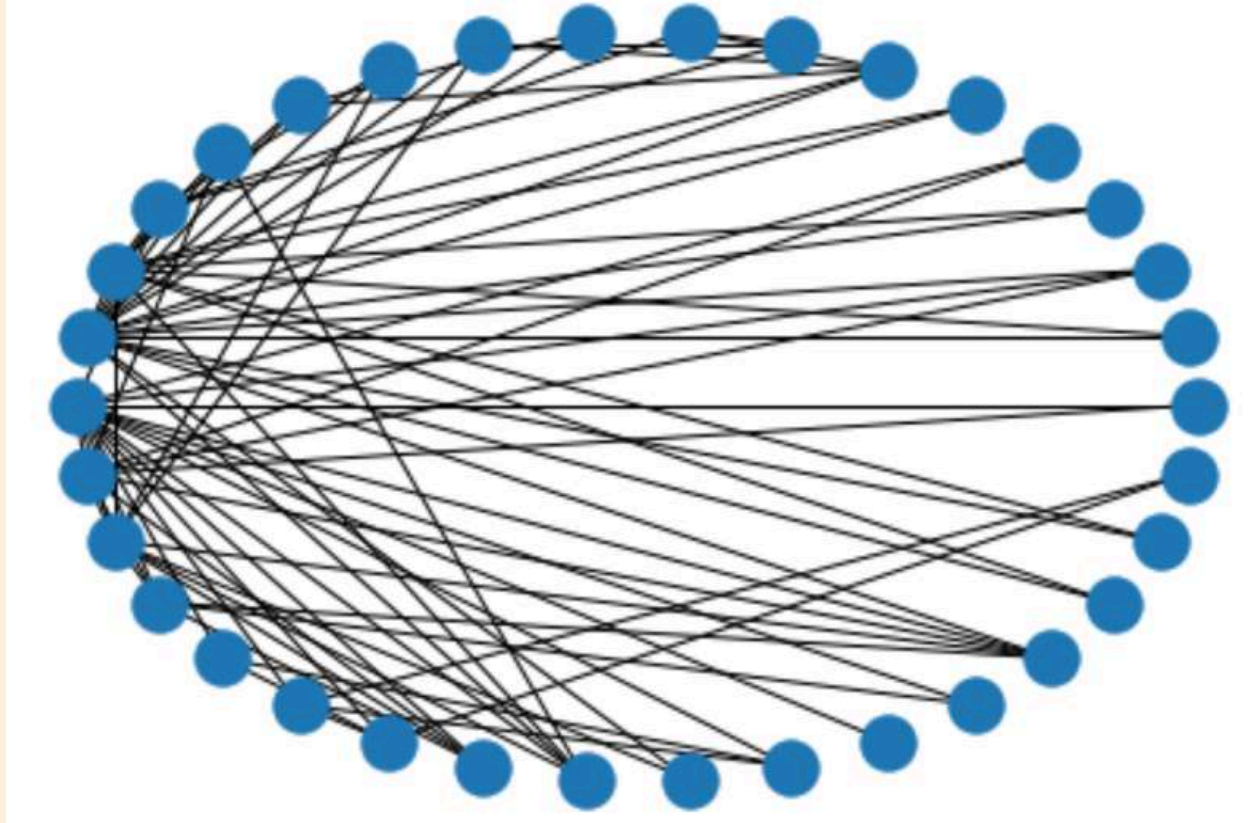




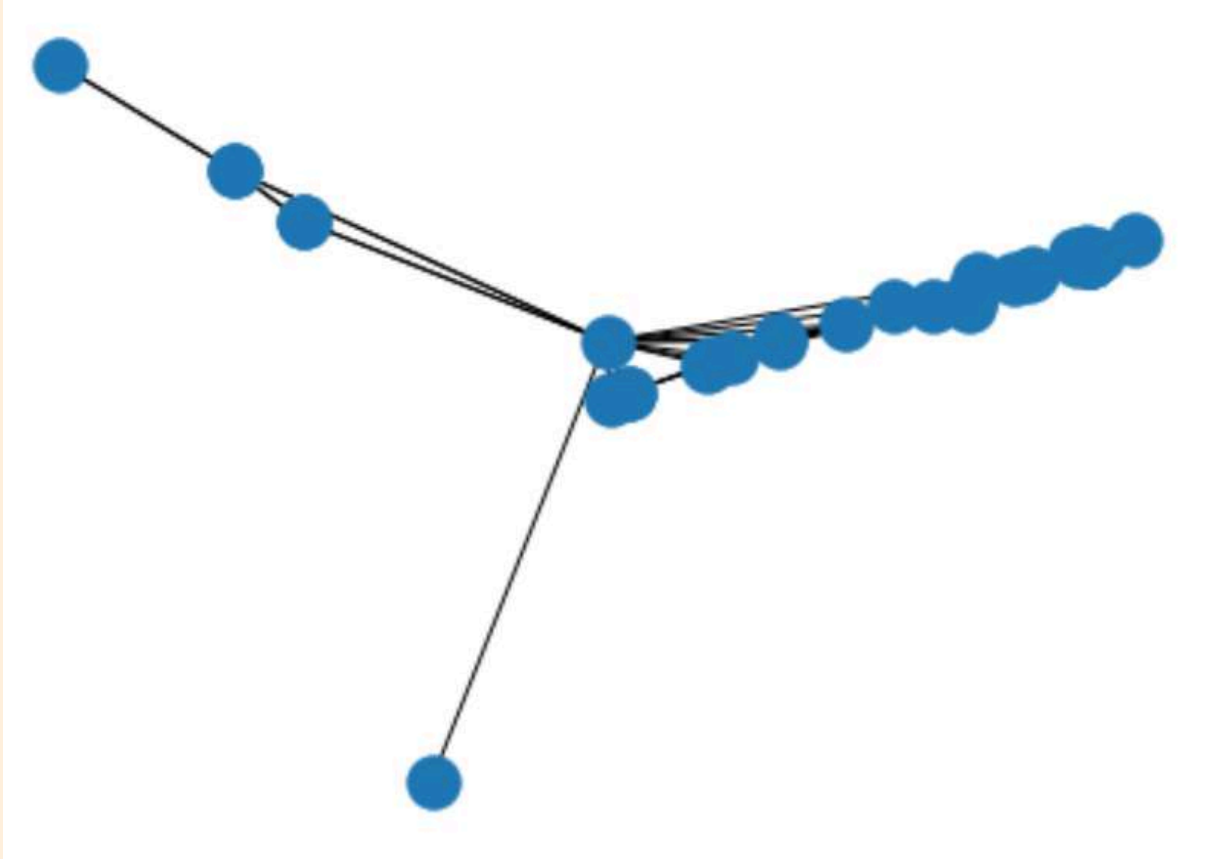
`nx.draw_networkx(g)`



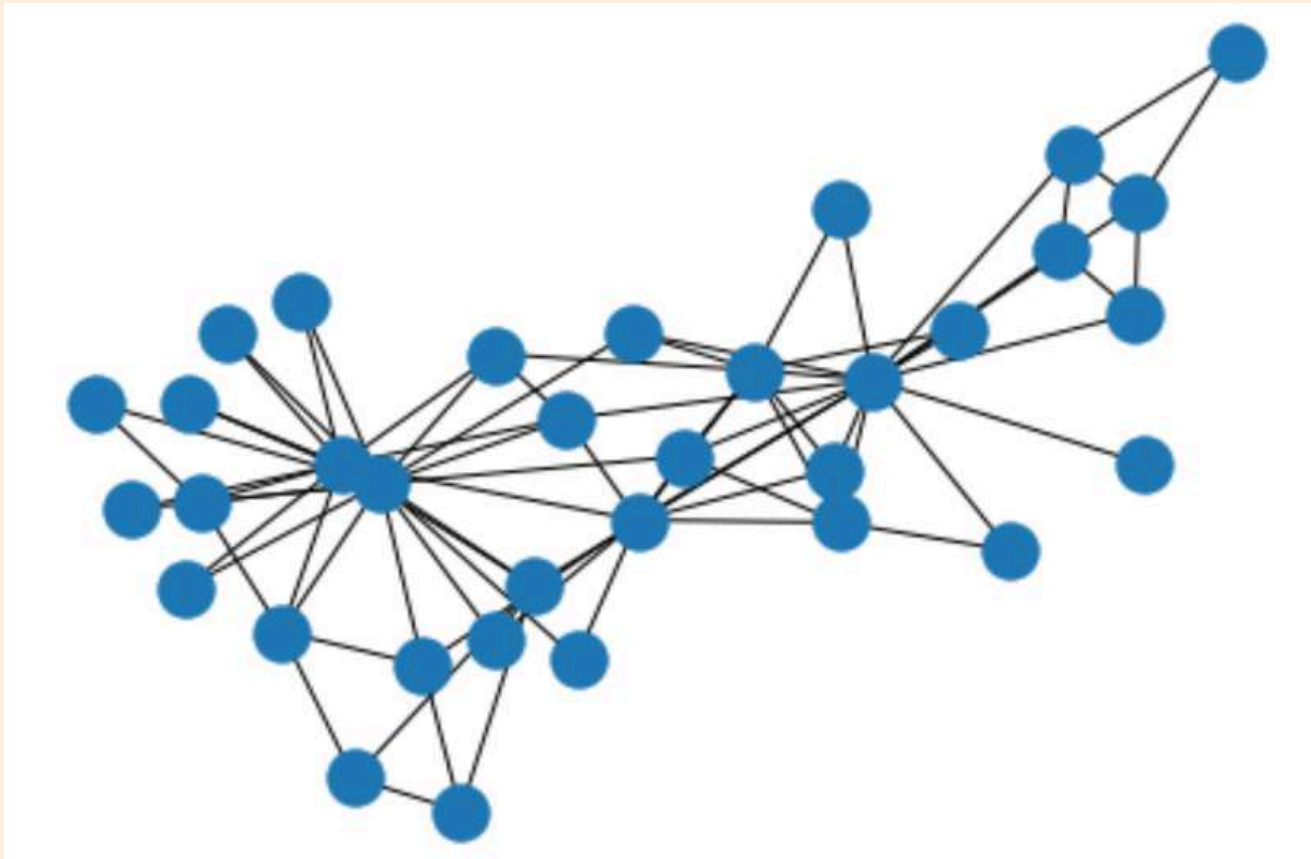
`nx.draw_circular(g)`



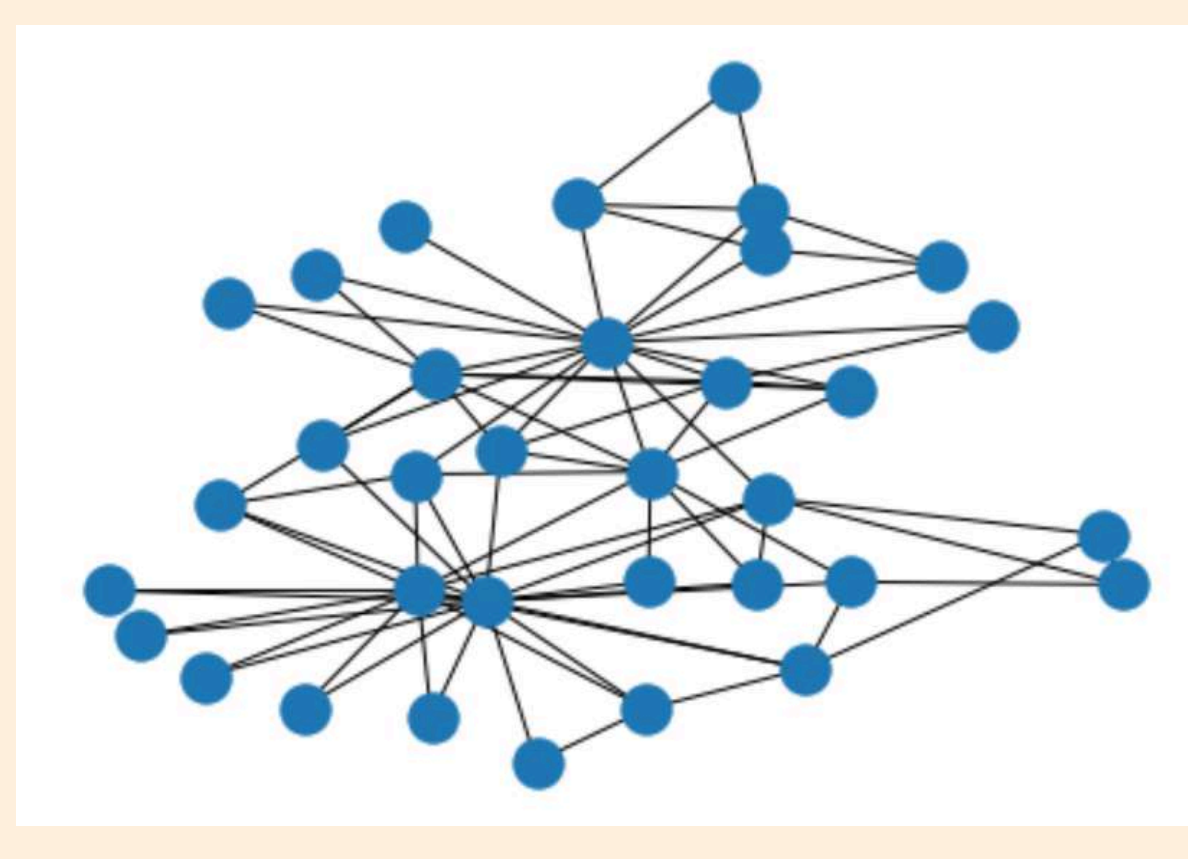
`nx.draw_shell(g)`



`nx.draw_spectral(g)`



`nx.draw_spring(g)`



`nx.draw_kamada_kawai(g)`

#2928



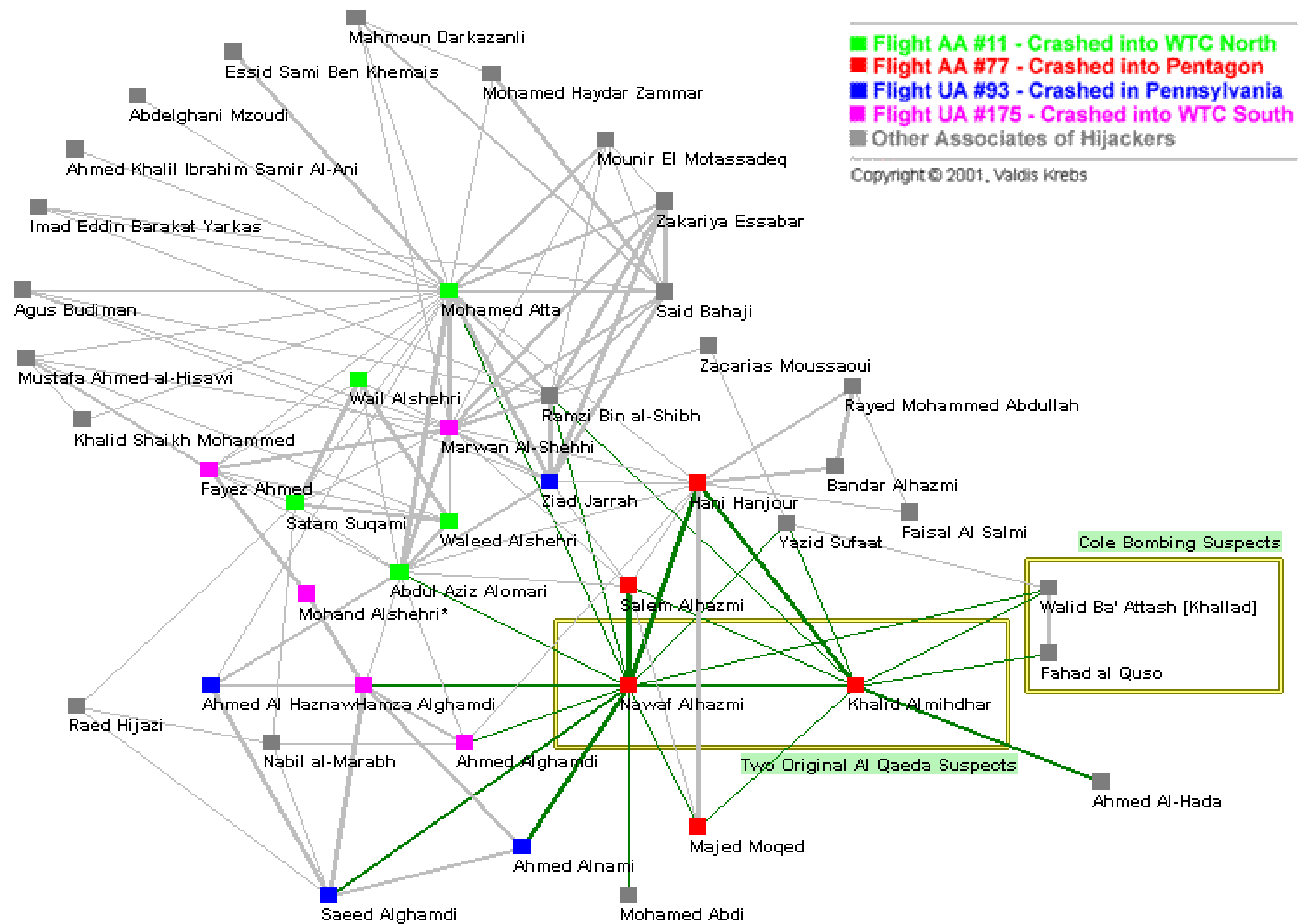
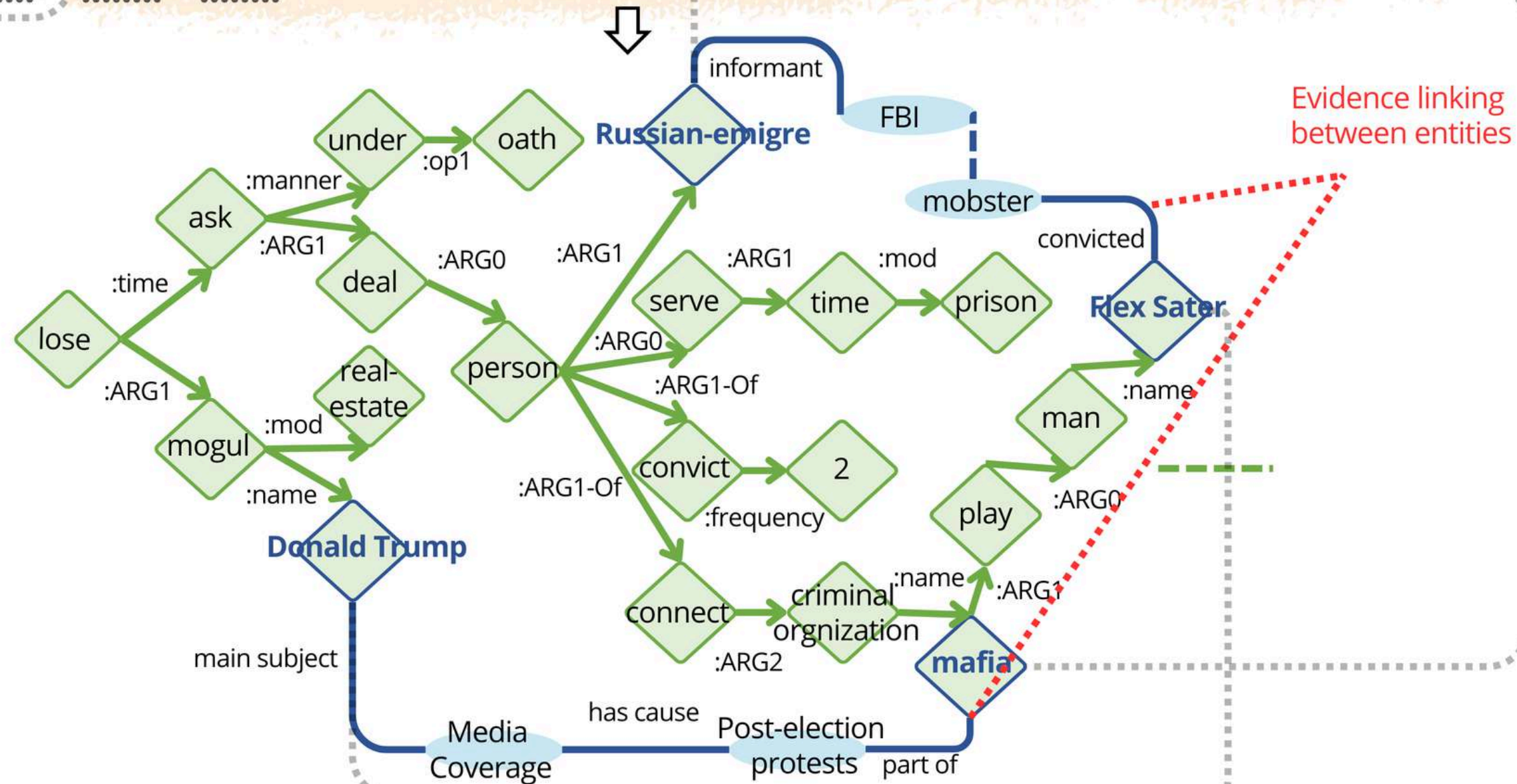


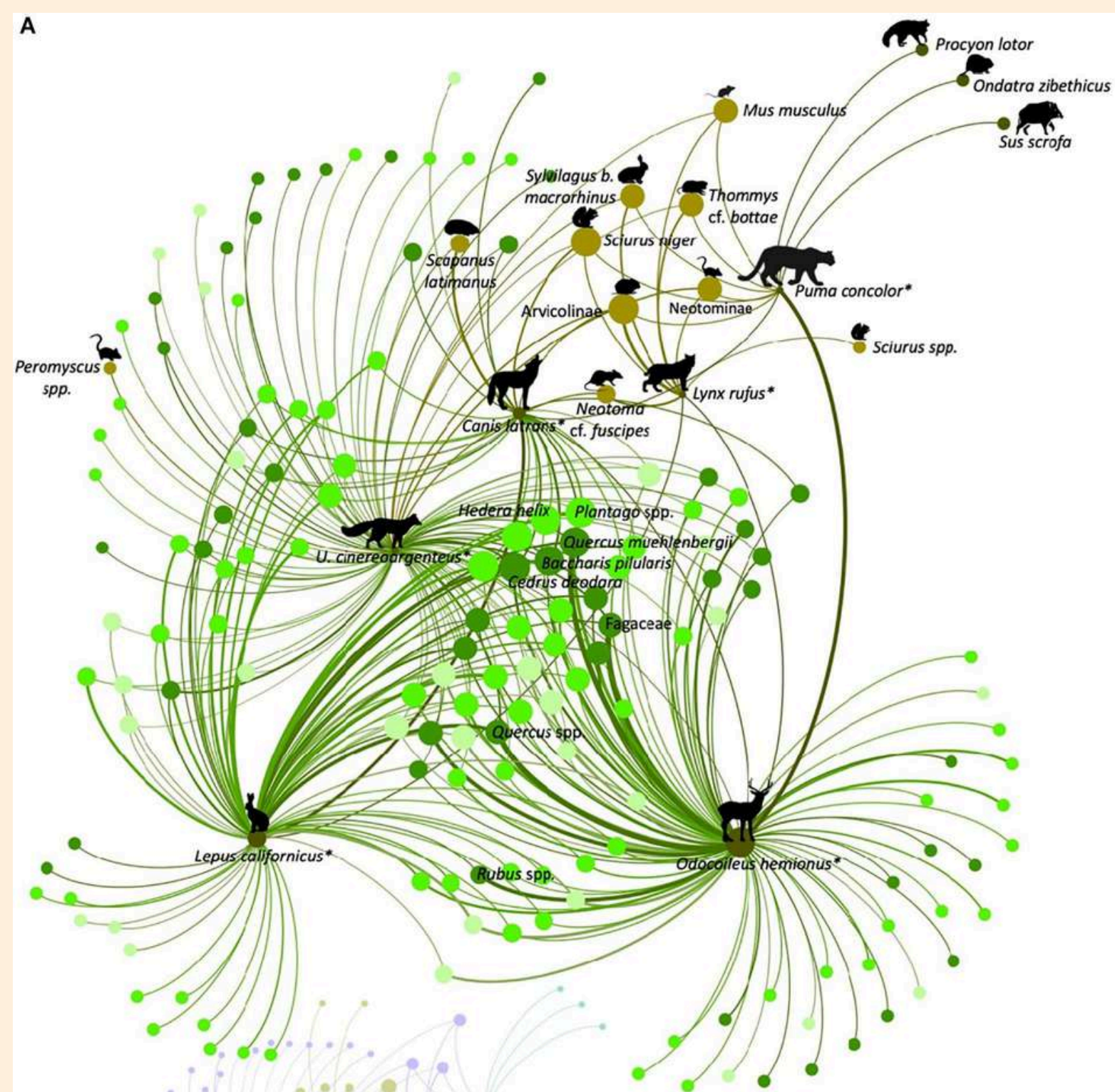
Figure 3 - All Nodes within 2 steps / degrees of original suspects

Memory Lapse? Trump Seeks Distance From Advisor With Past Ties to Mafia.

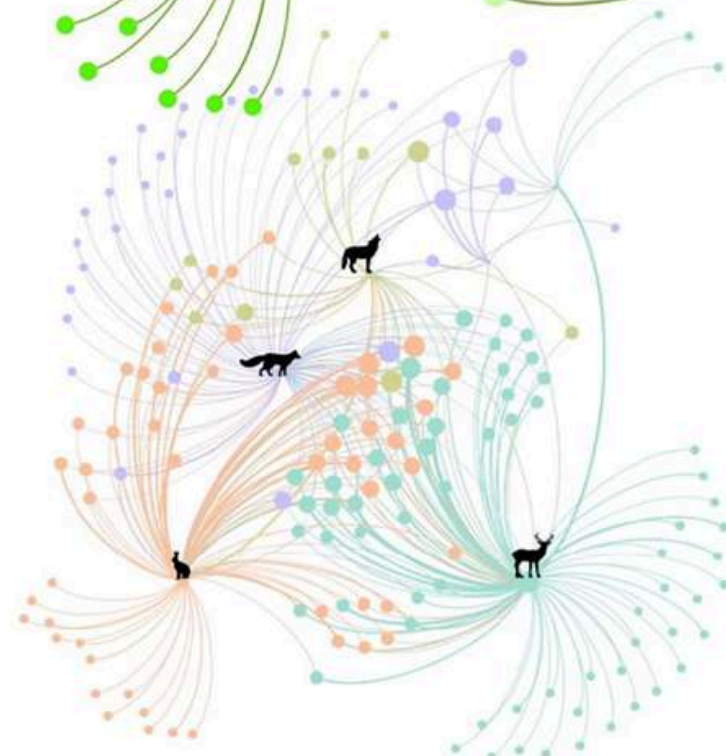
Though he touts his outstanding memory when **Donald Trump** was asked under oath about his dealings with a twice convicted **Russian-émigré** who served prison time and had documented **mafia** connections the real-estate mogul was at a loss . Even though the man, **Felix Sater**, had played a role in a number of high profile Trump branded projects across the country.



A



B



Ecological Network Legend

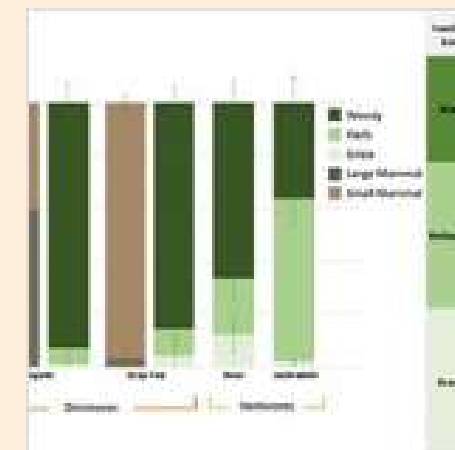
Nodes (mOTUs) = Mammal (19) & plant (151) taxa found in diet

Node Size = In-degree of connectance (larger node = more consumed mOTUs)

Links = Weighted interactions (310) by frequency of occurrence

Node Color = Functional Groups

- Herb
- Woody
- Grass
- Small Mammal
- Large Mammal



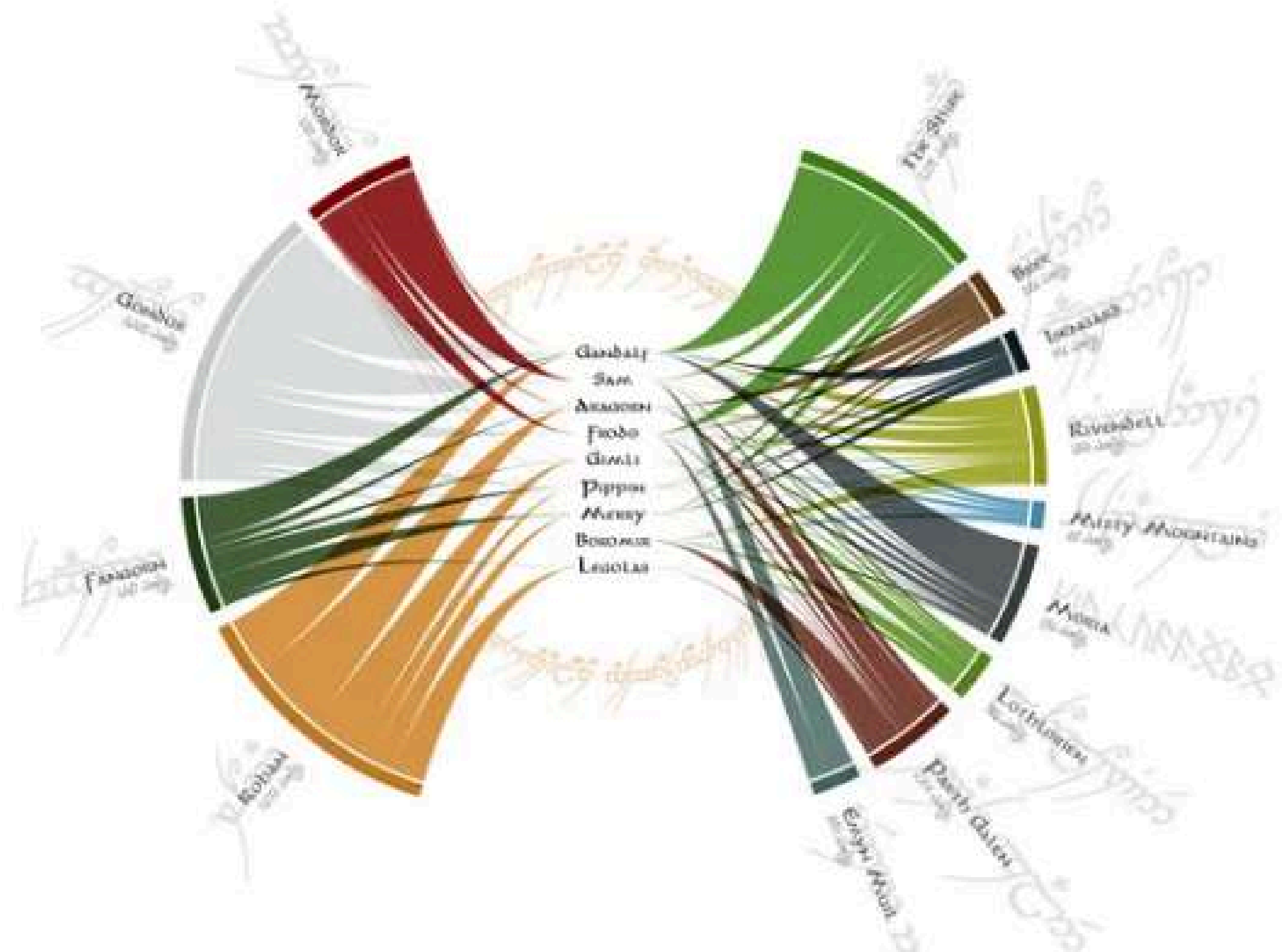
Molecular Ecological Network Analyses: An Effective Conservation Tool for the...

Global biodiversity is threatened by the anthropogenic restructuring of animal communities...



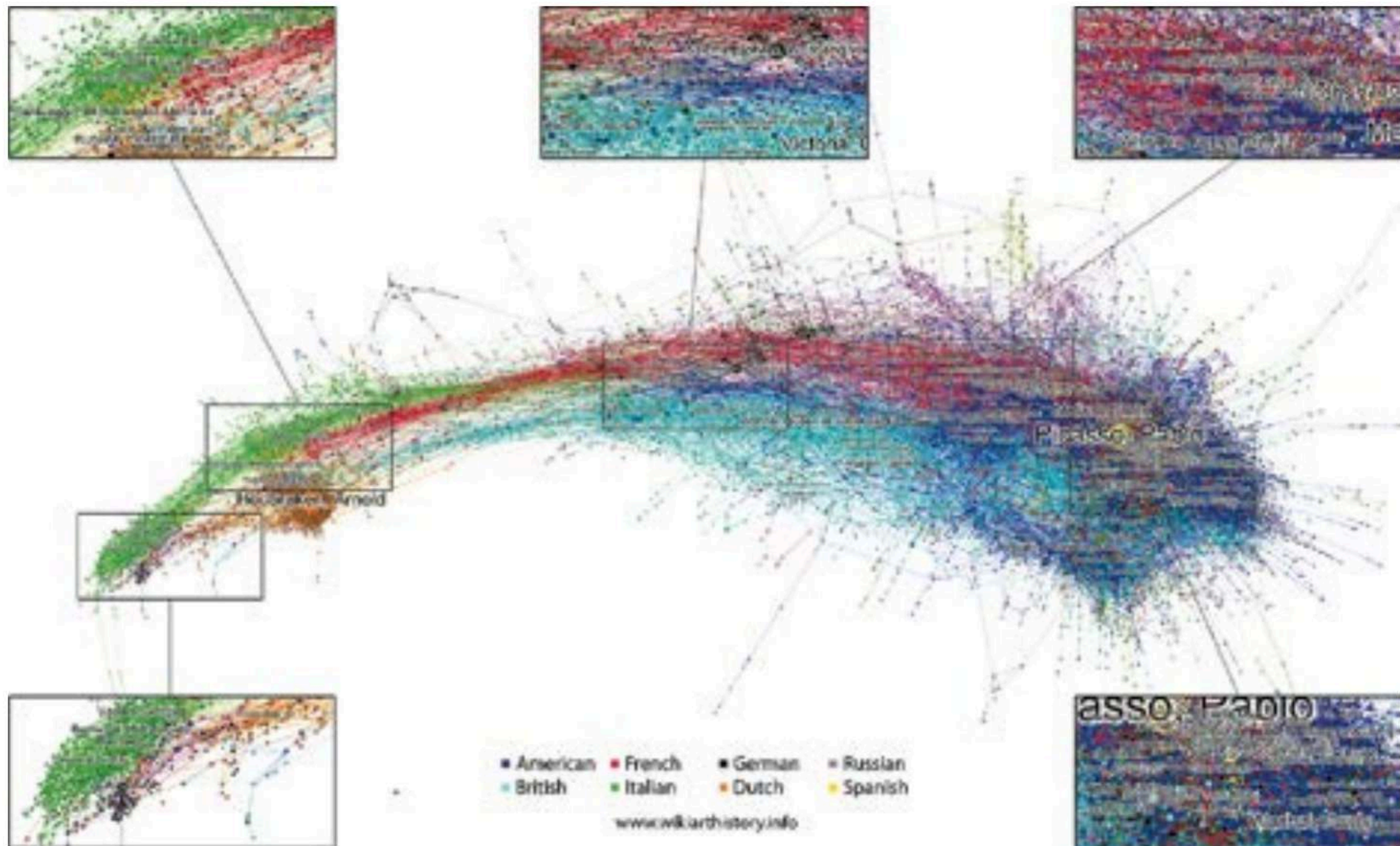
https://media.sciencephoto.com/image/c0268982/800wm/C0268982-Global_transport_networks_on_night_map.jpg

Chord Diagram



The Words of the Lord of the Rings

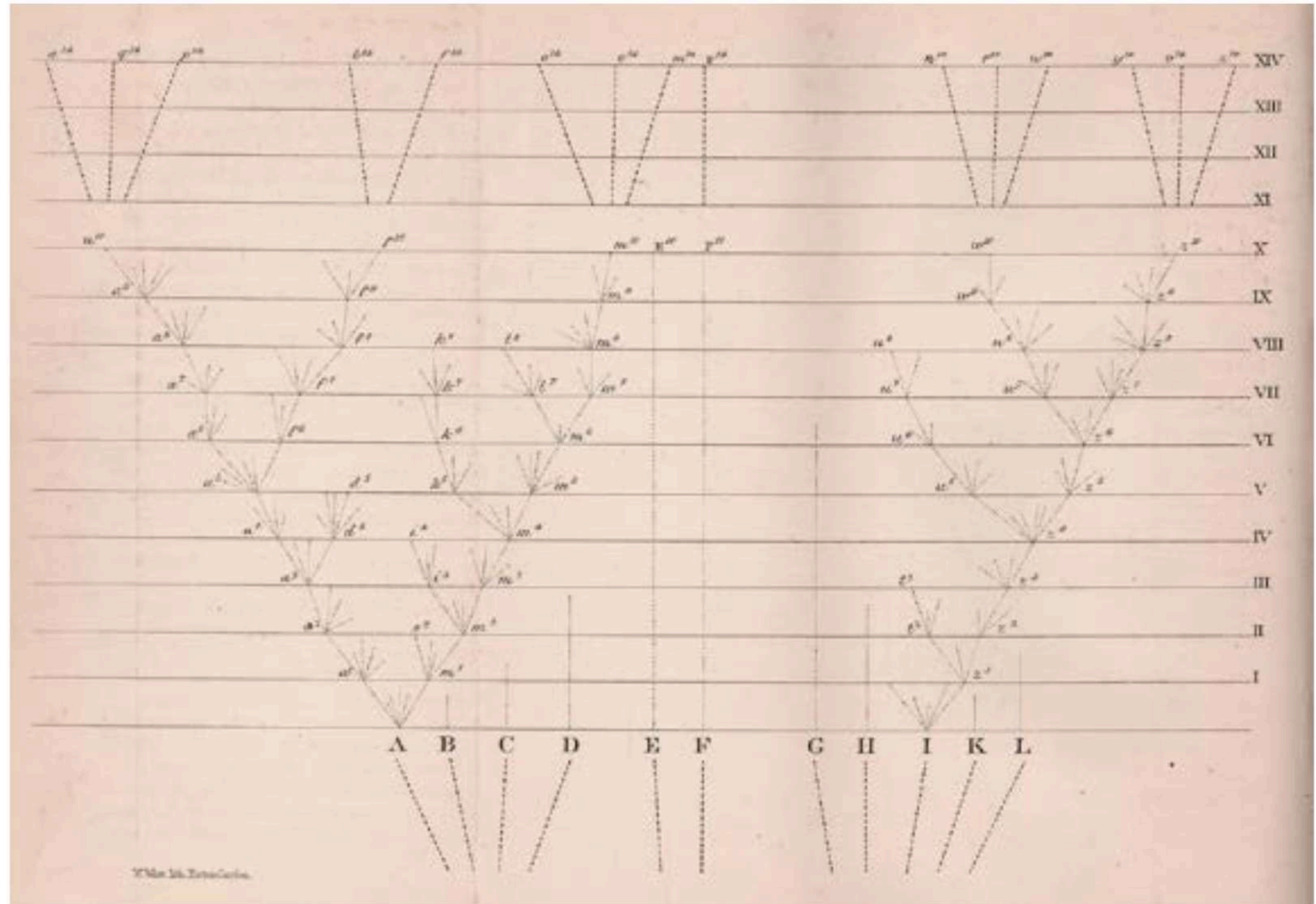
Explore how many words the members of the Fellowship have spoken across Middle Earth during the 3 Lord of the Rings movies



CV
ME
WIN



The only illustration in the first edition of Charles Darwin's *On the origin of species* (1859) is this tree of life showing the relationships between hypothetical species of an unnamed genus.



Organization of the Finnish Ministry of the Environment

Minister of the Environment, Energy and Housing

Permanent Secretary

Management support

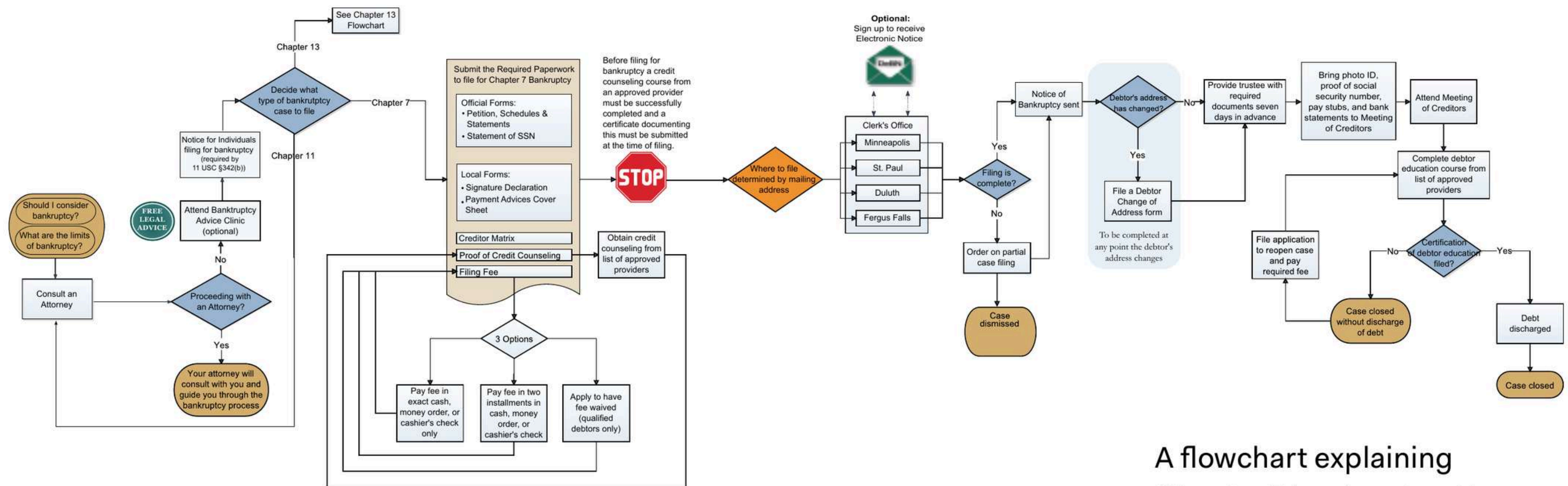
Admin. and international affairs

Information and communications

Department
of the Built
Environment

Environmental
Protection
Department

Department
of the Natural
Environment



A flowchart explaining Chapter 7 bankruptcy, the most common form of bankruptcy in the United States

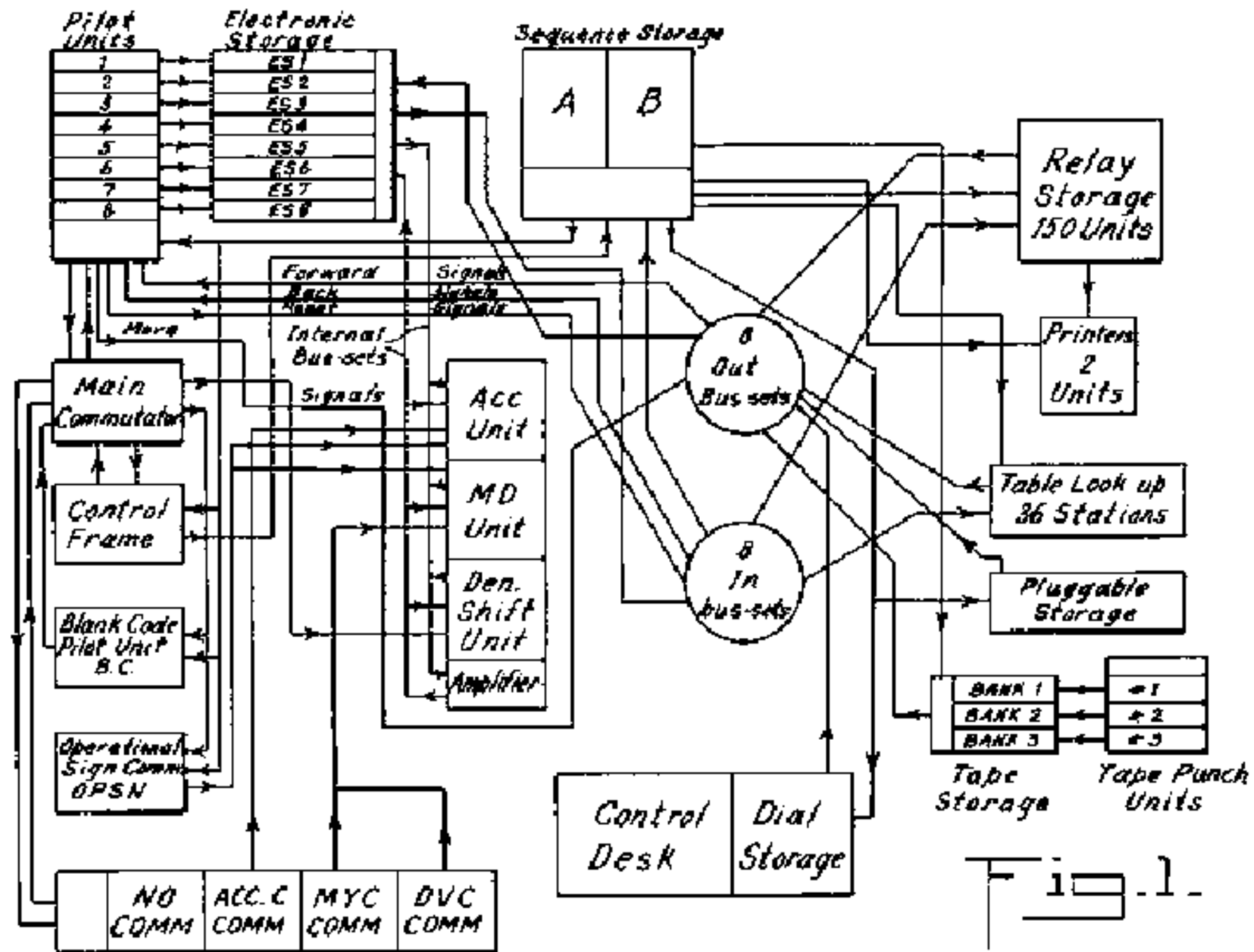
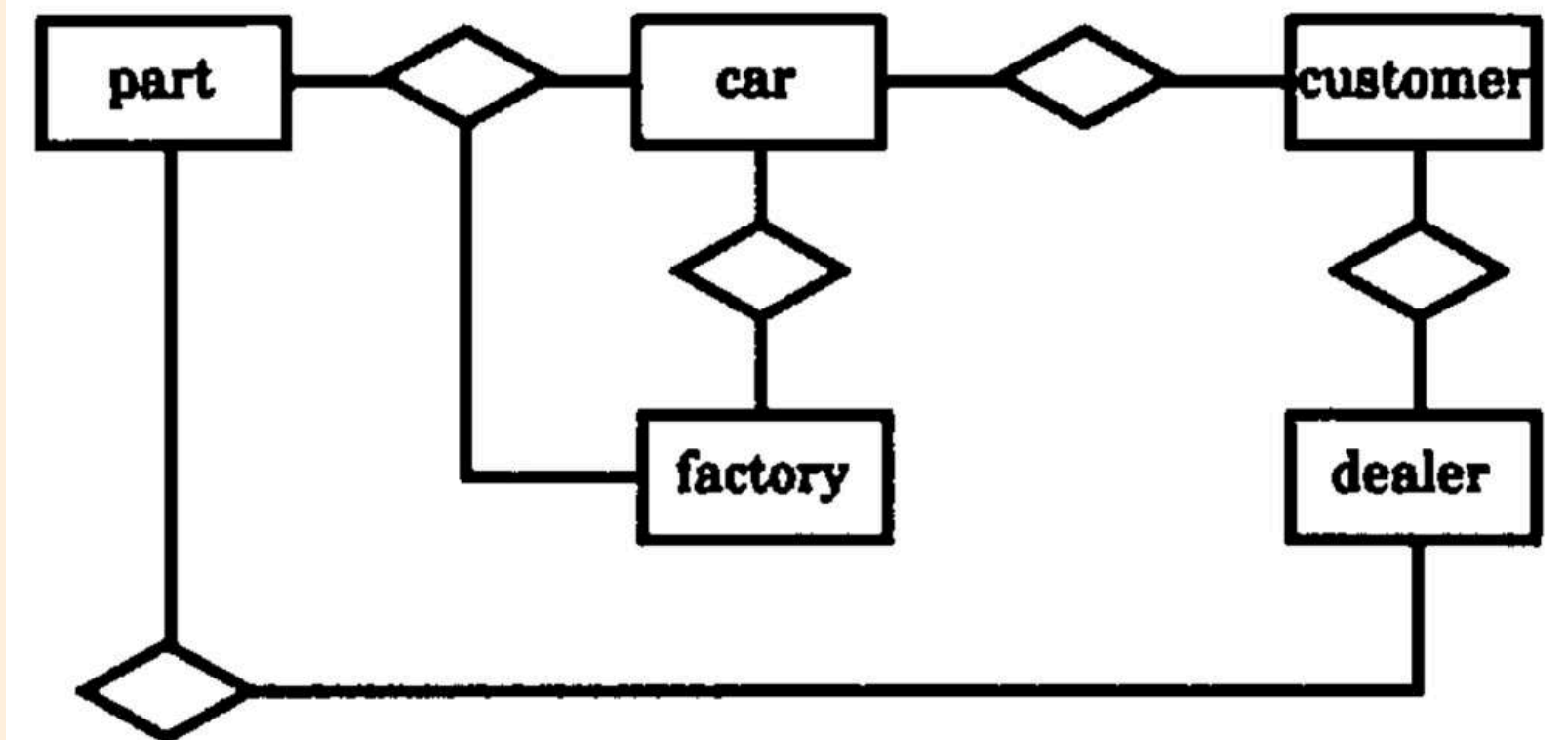
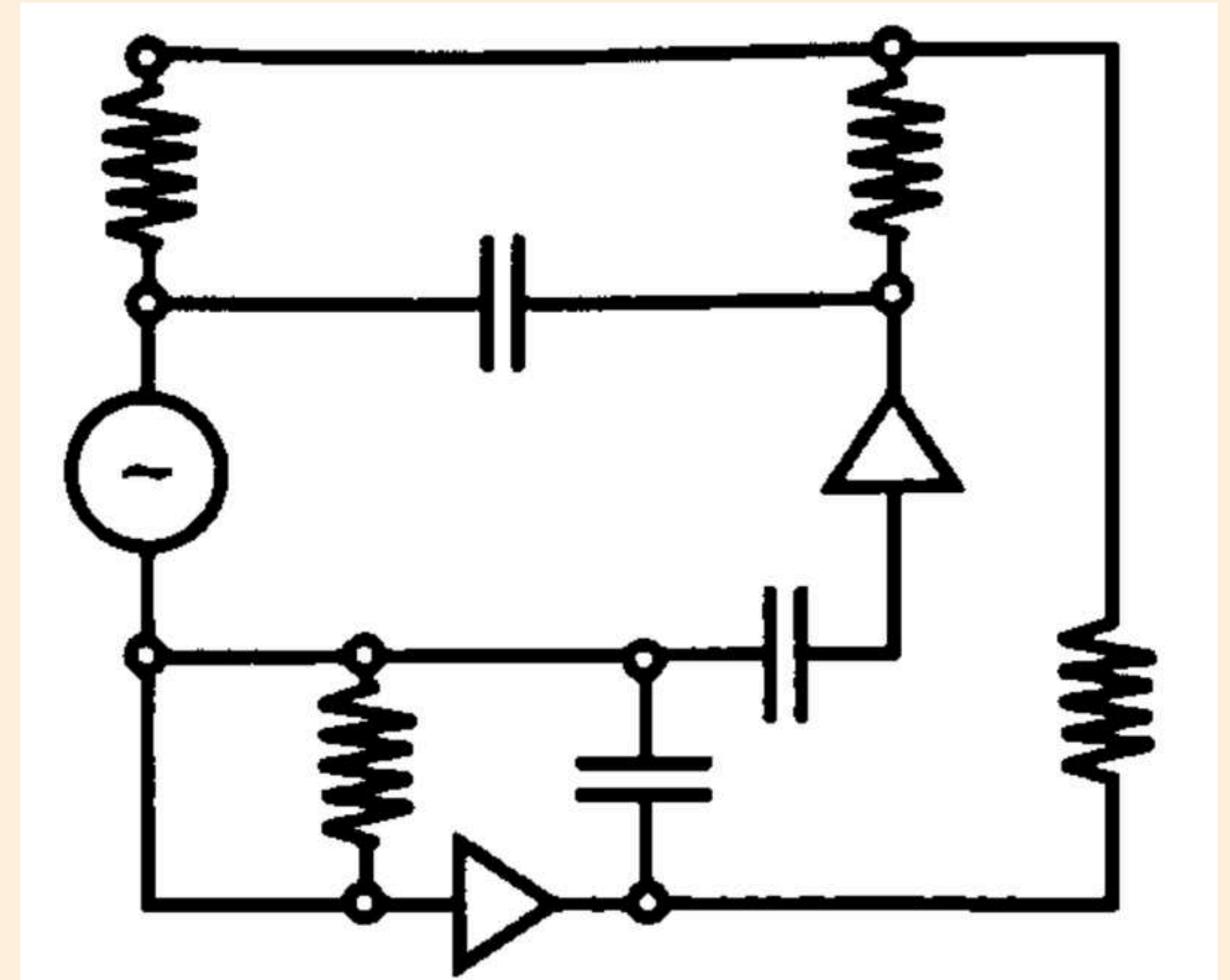
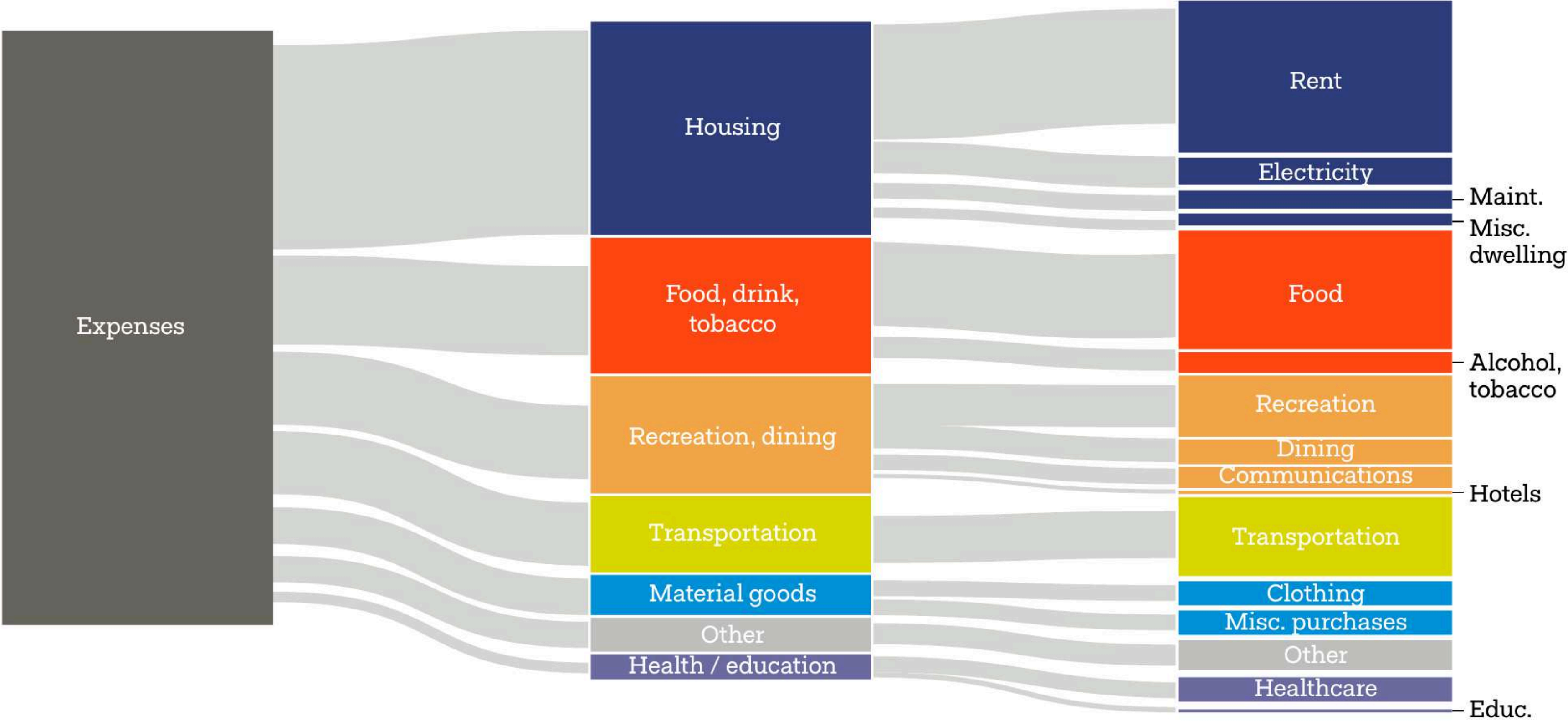


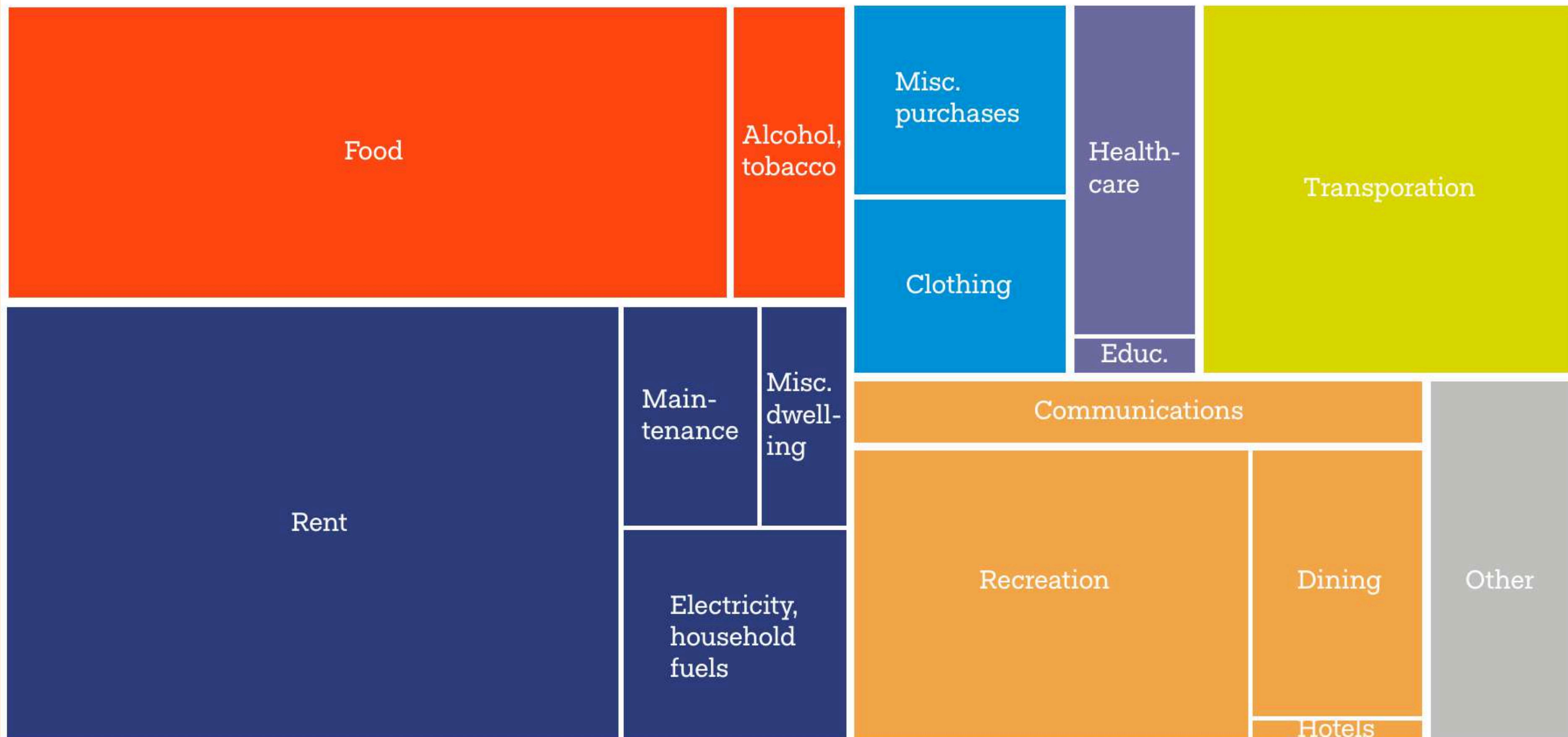
Fig. 1.

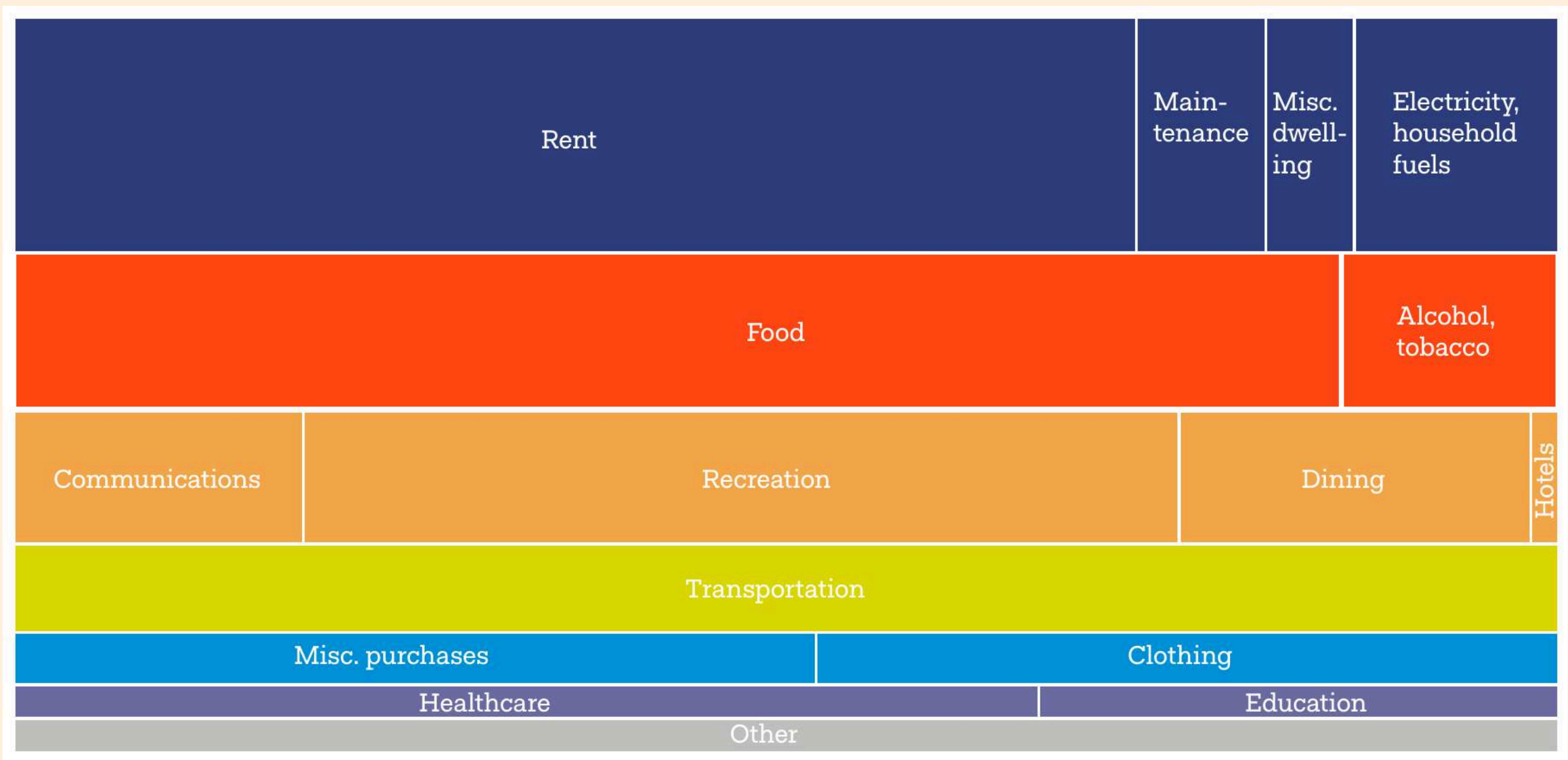


Single-person household expenditures in Iceland (2013–2016)

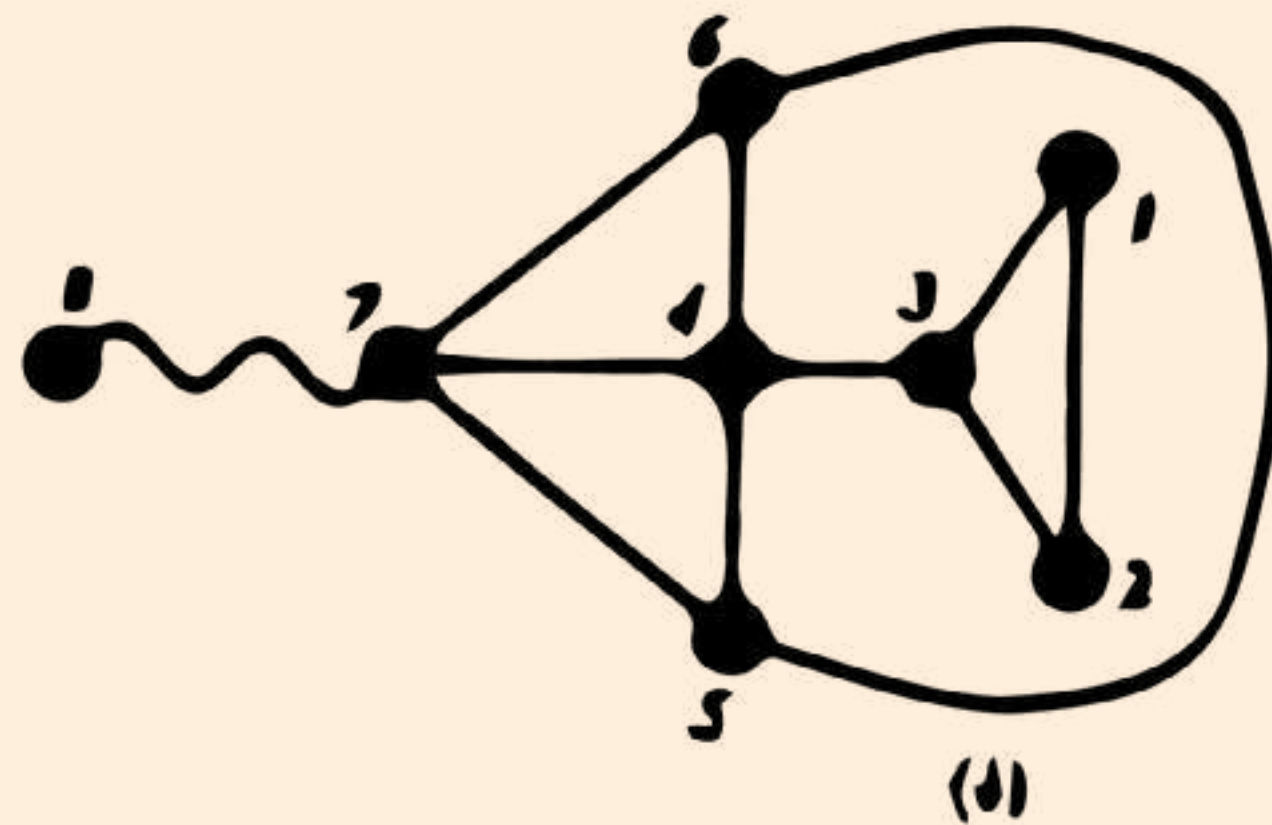
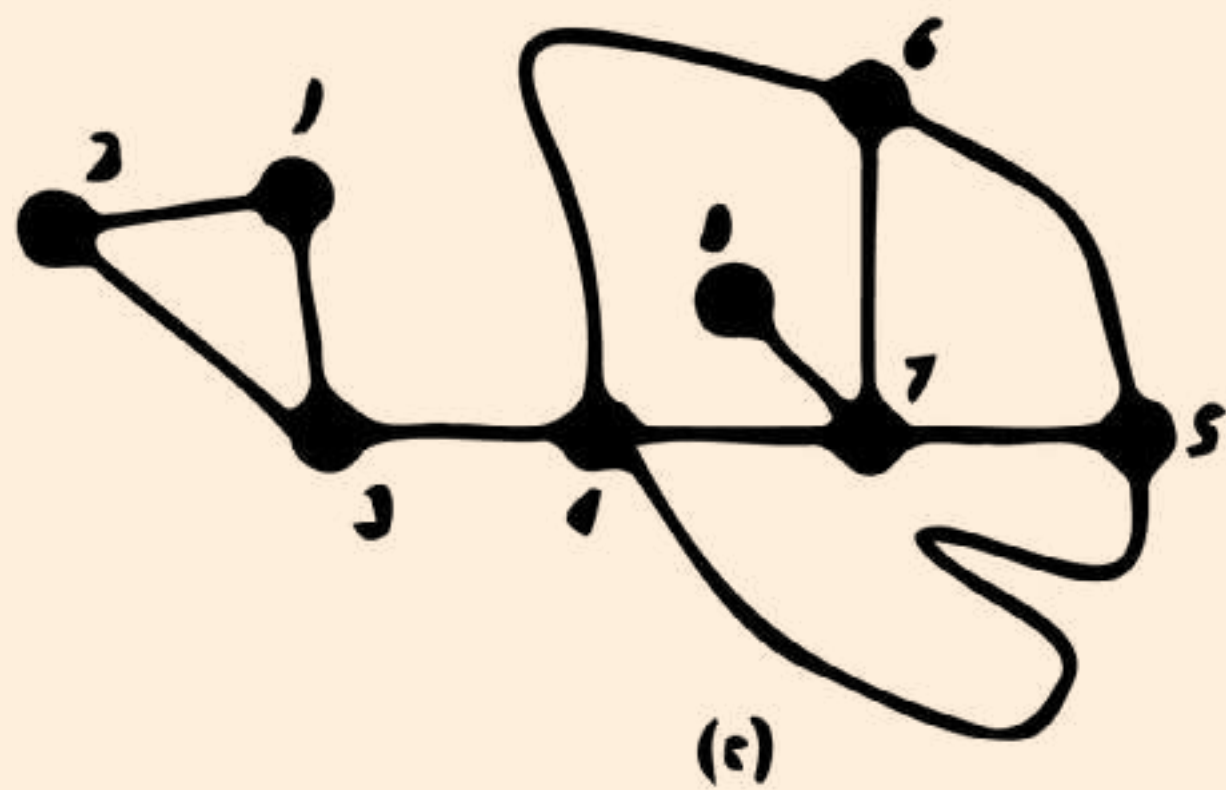
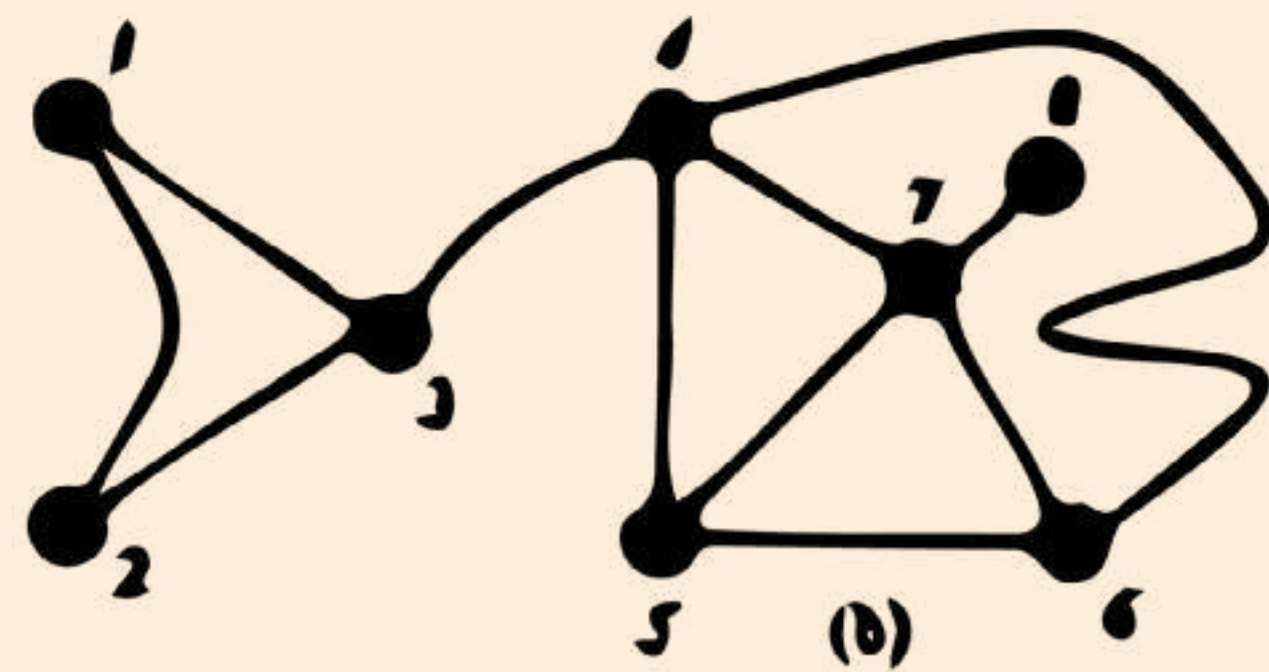
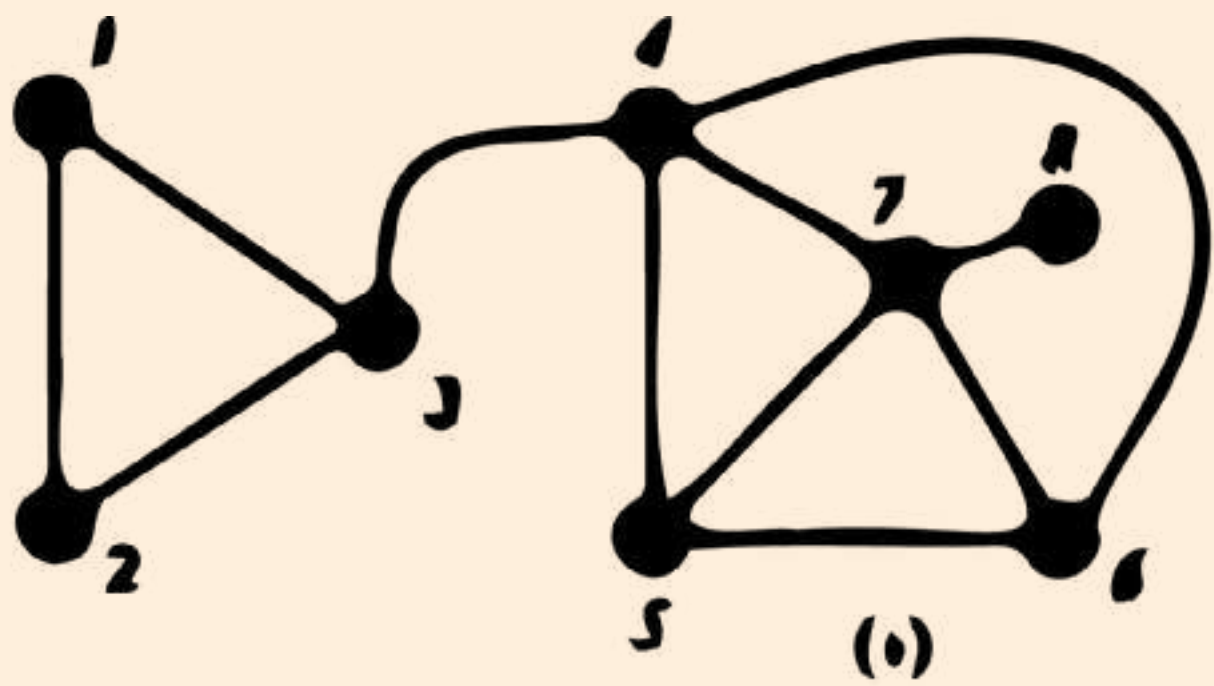


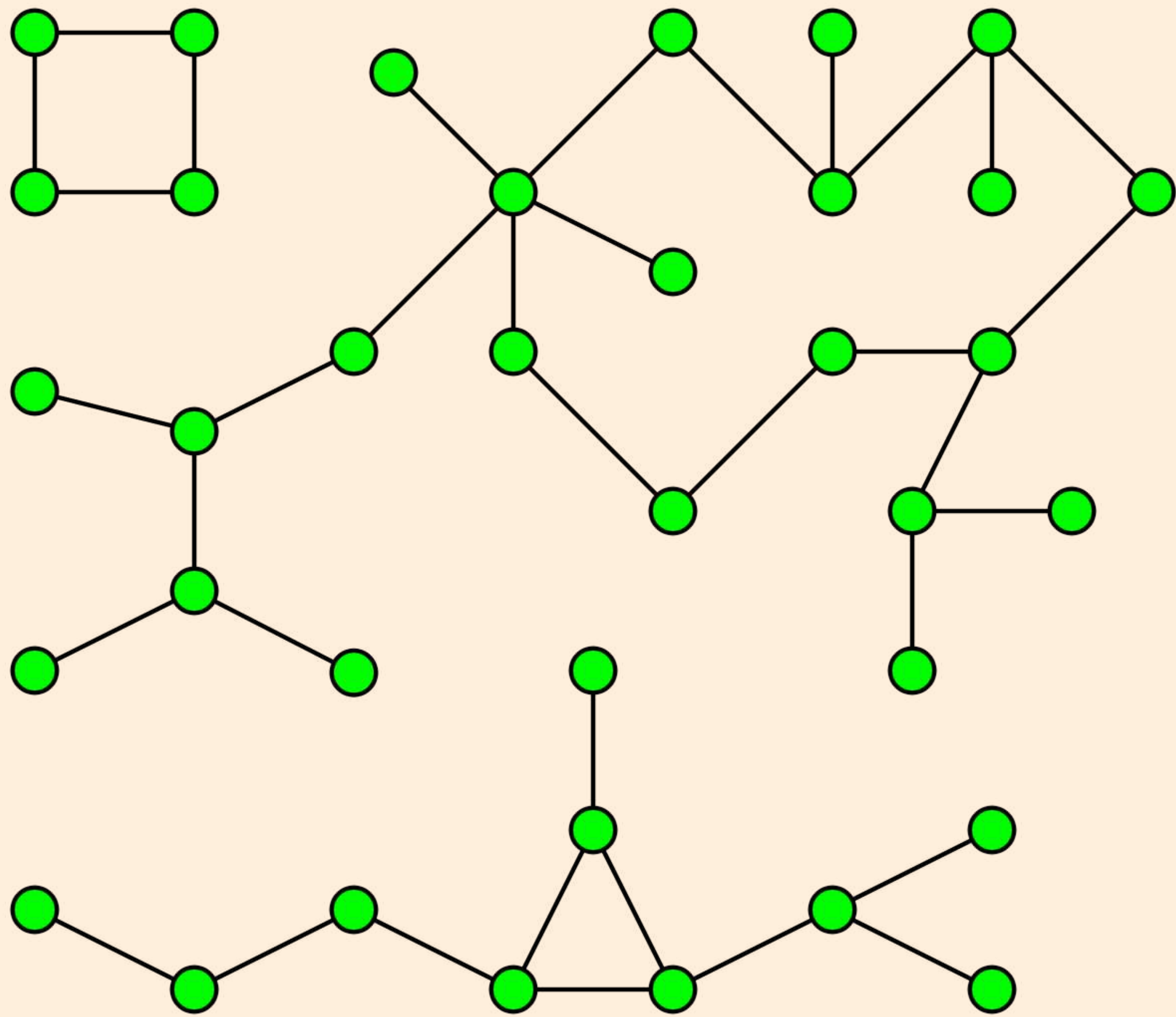
Single-person household expenditures in Iceland (2013–2016)





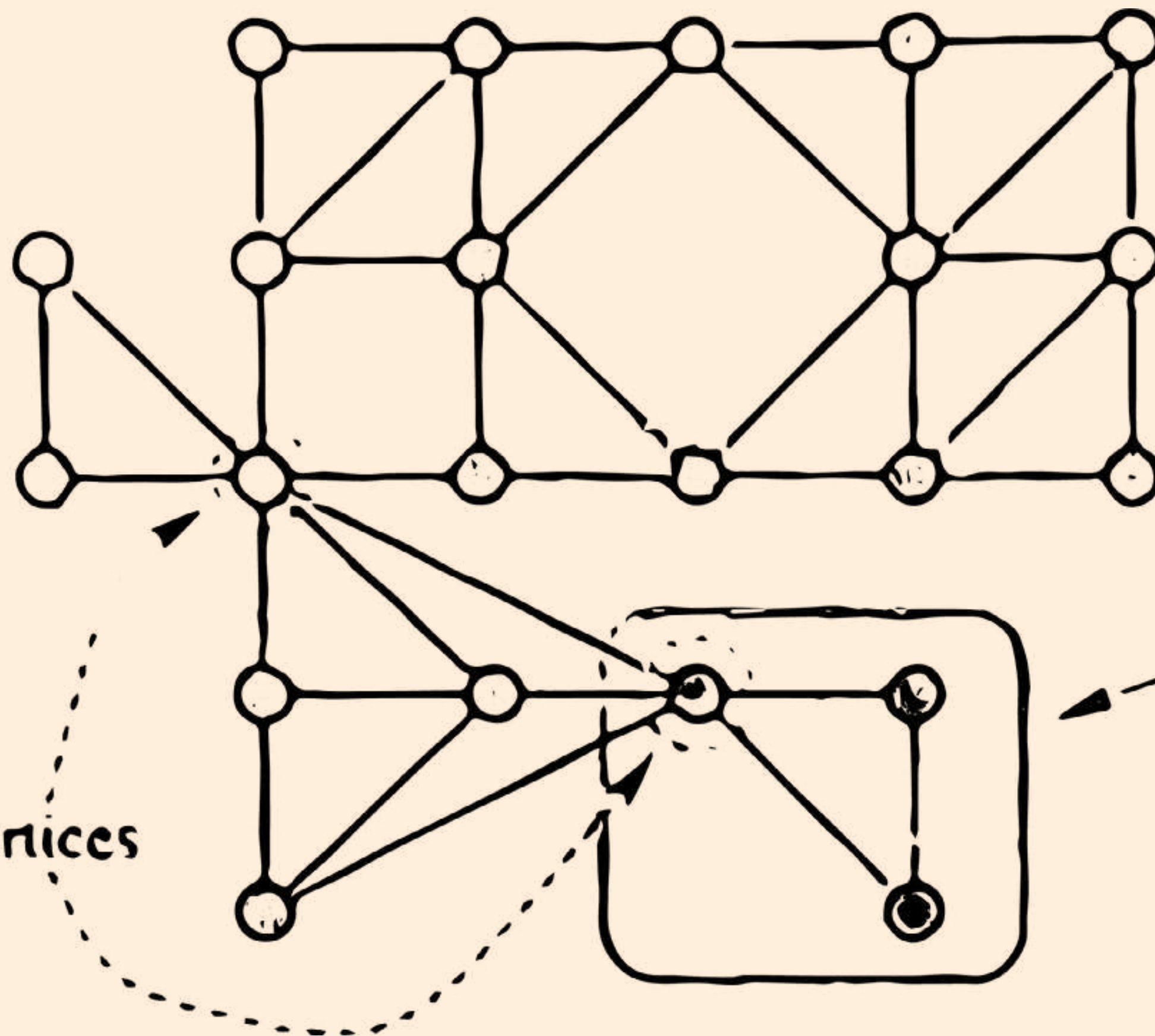
Planar Graph Drawing

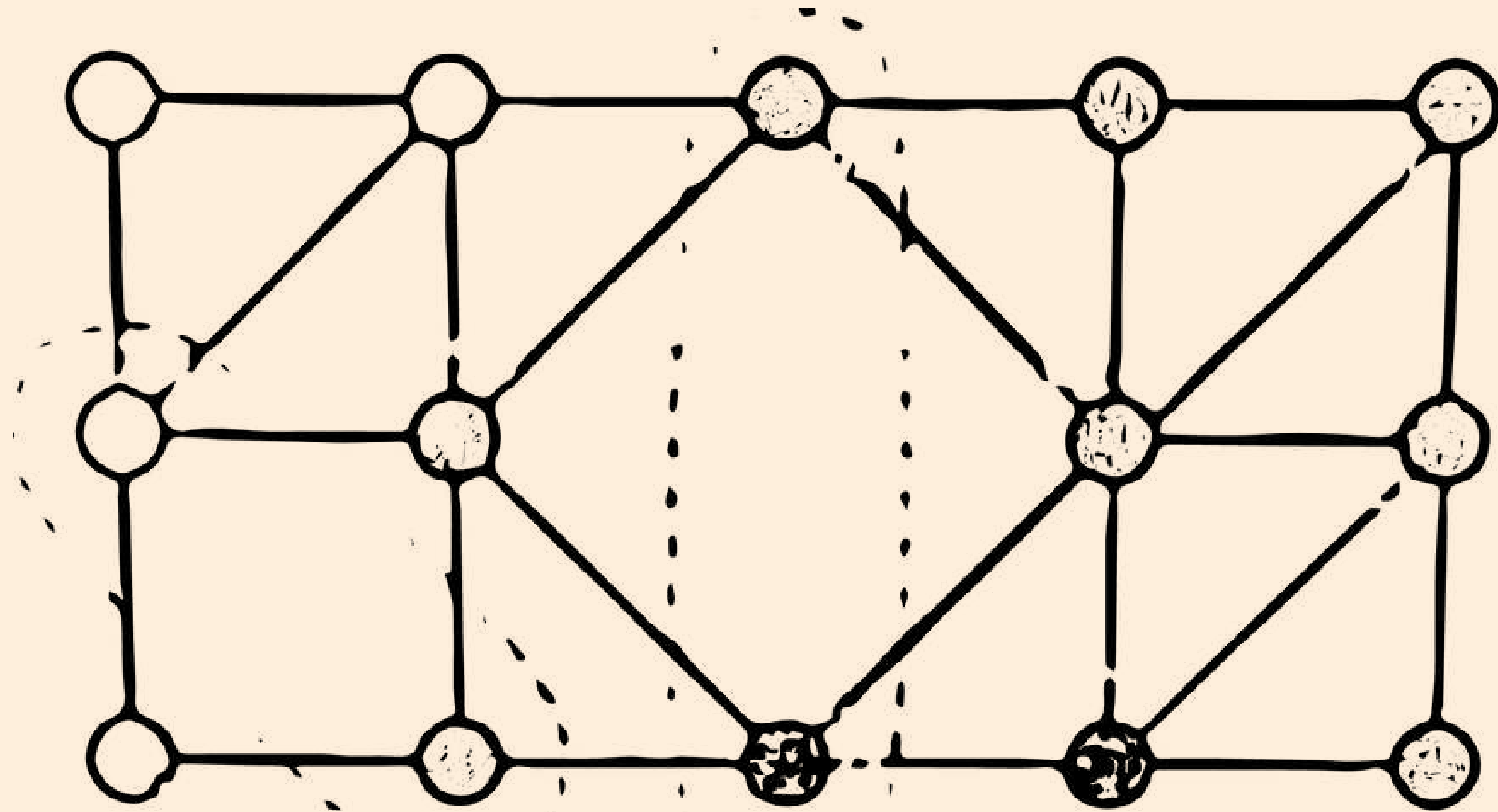




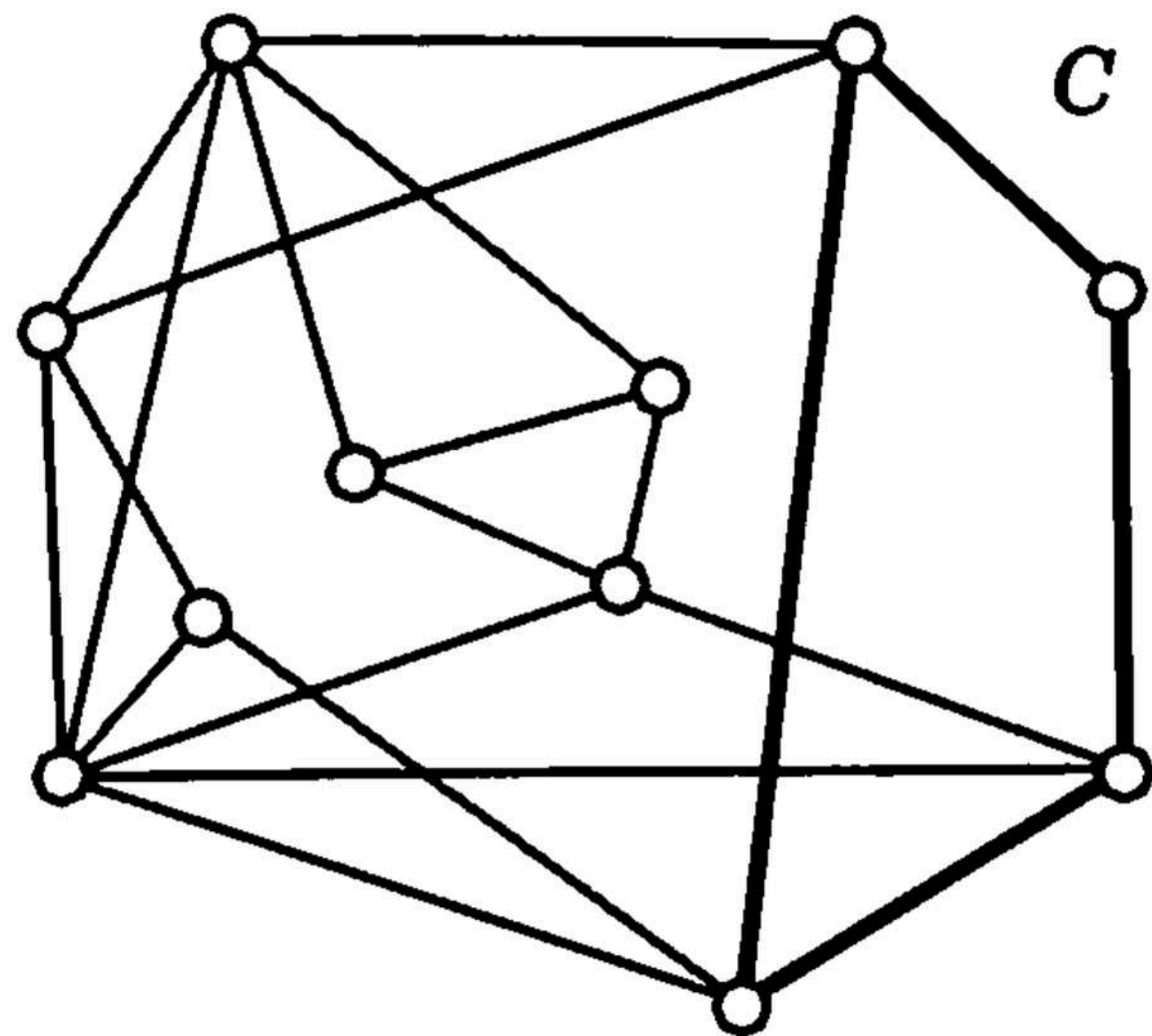
culverices

a block

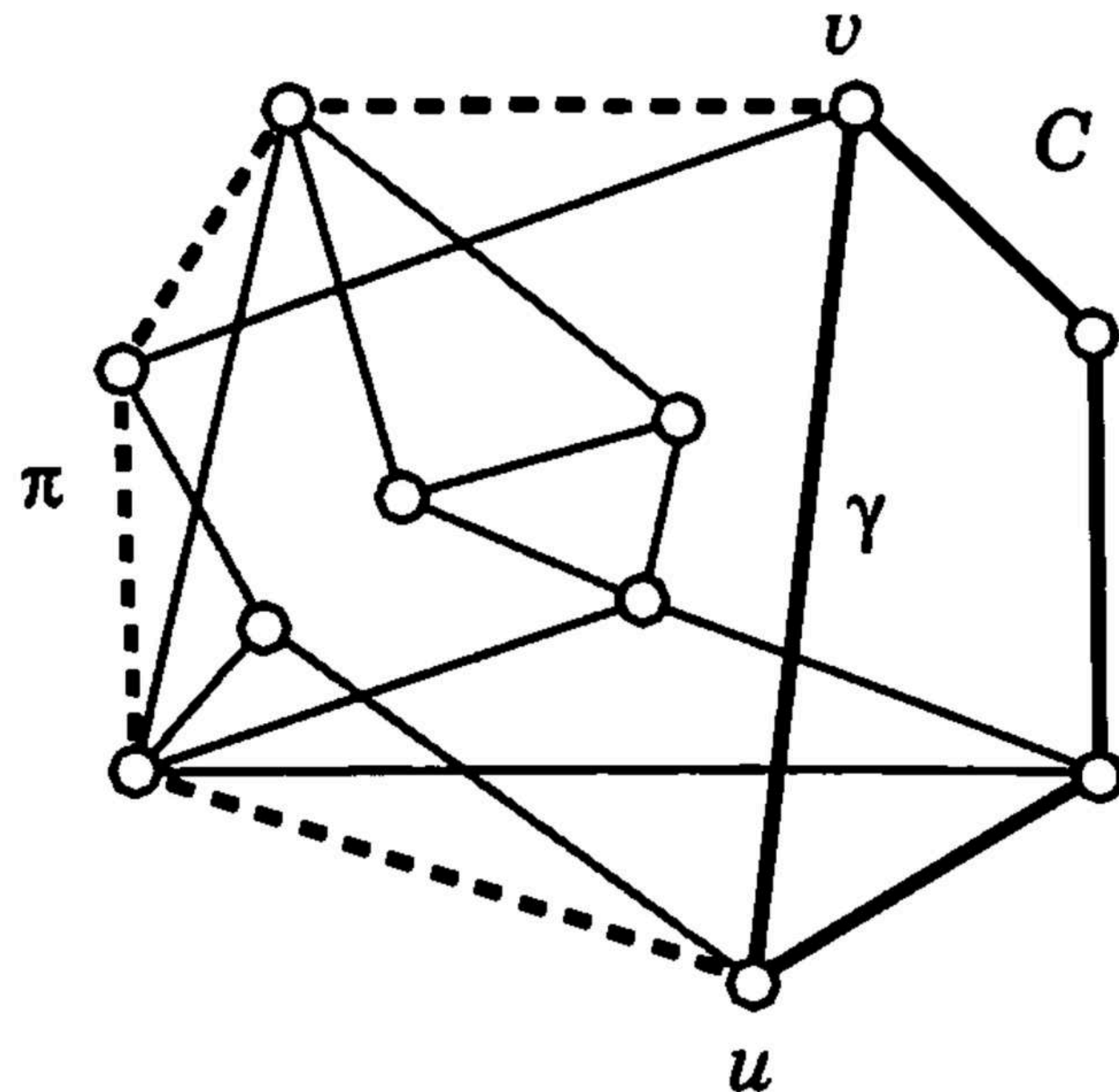




separating pairs



(a)



(b)

Figure 3.27: (a) Nonseparating cycle C . (b) Separating cycle C' obtained from C as shown in the proof of Lemma 3.4.

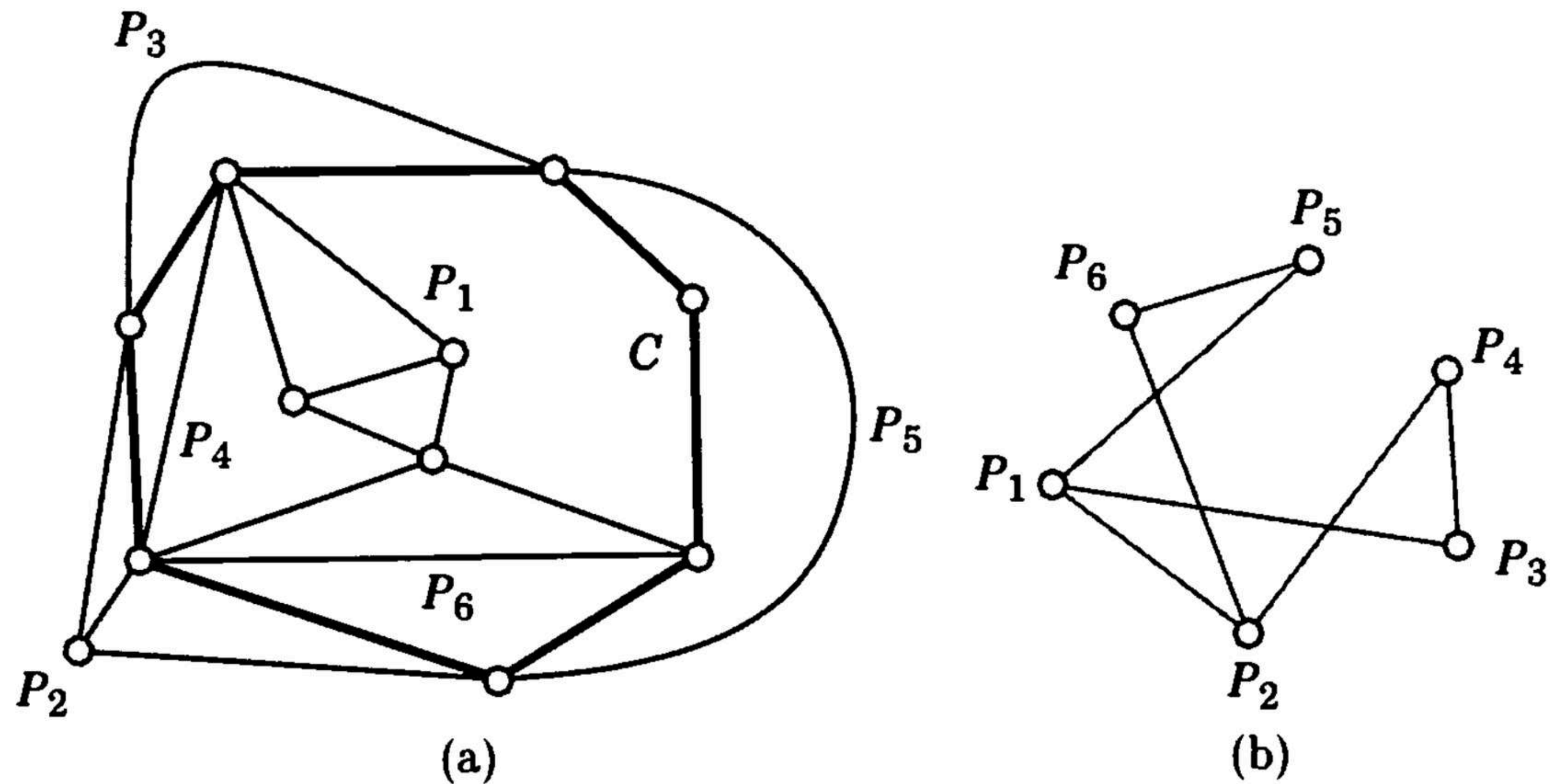


Figure 3.28: (a) A planar drawing of the graph G of Figure 3.25, where pieces P_1 , P_4 , and P_6 are drawn inside cycle C and the other pieces are drawn outside. (b) The interlacement graph I of the pieces of G with respect to cycle C . Graph I is bipartite, with P_1 , P_4 , and P_6 on one side, and the other pieces on the other side.

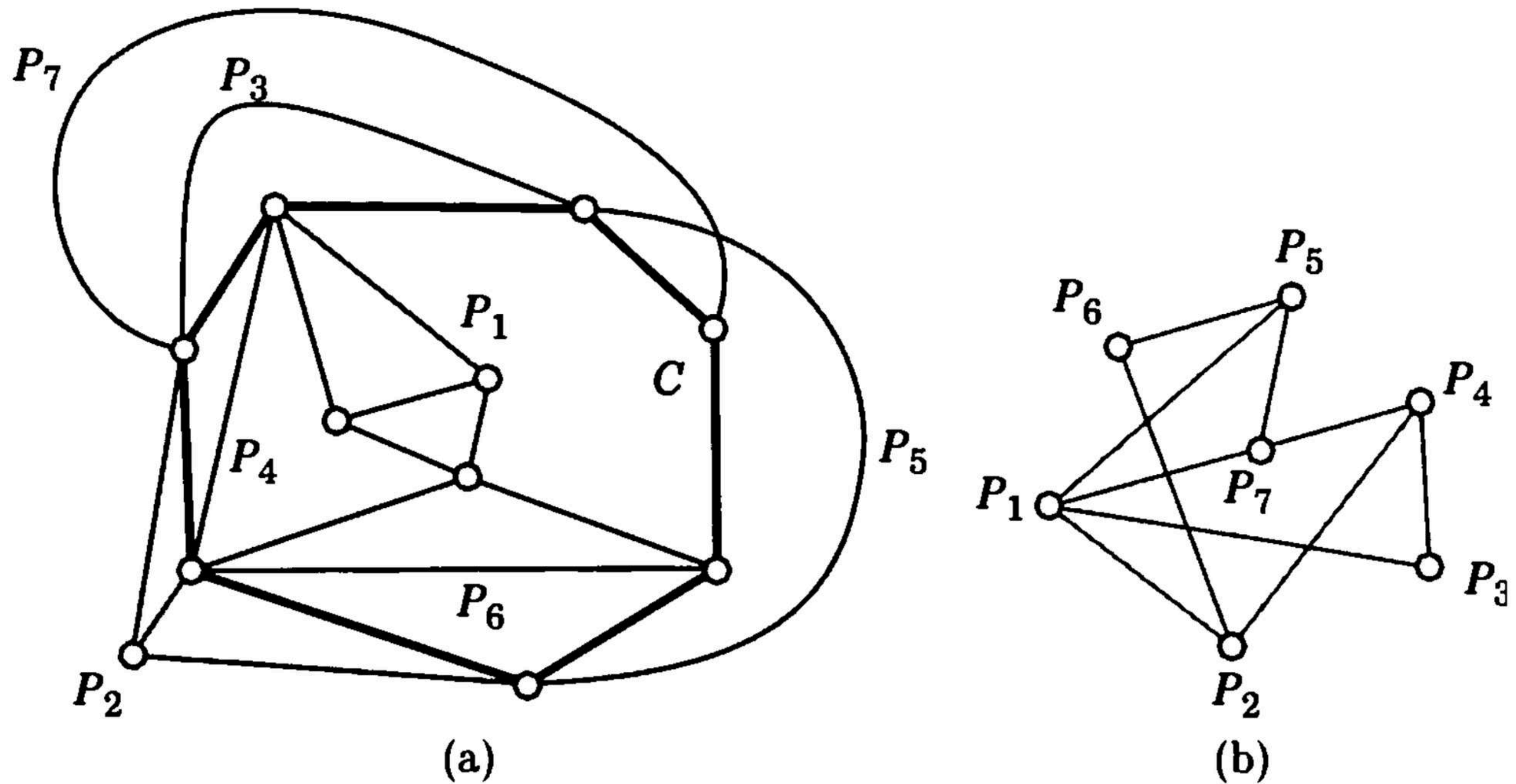


Figure 3.29: (a) A graph G and a cycle C with seven pieces. (b) The interlacement graph I of the pieces of graph G with respect to C . Graph I is not bipartite, which implies that G is not planar.

Algorithm 3.5 *Planarity-Testing*

Input: a biconnected graph G with n vertices and at most $3n - 6$ edges, and a separating cycle C of G

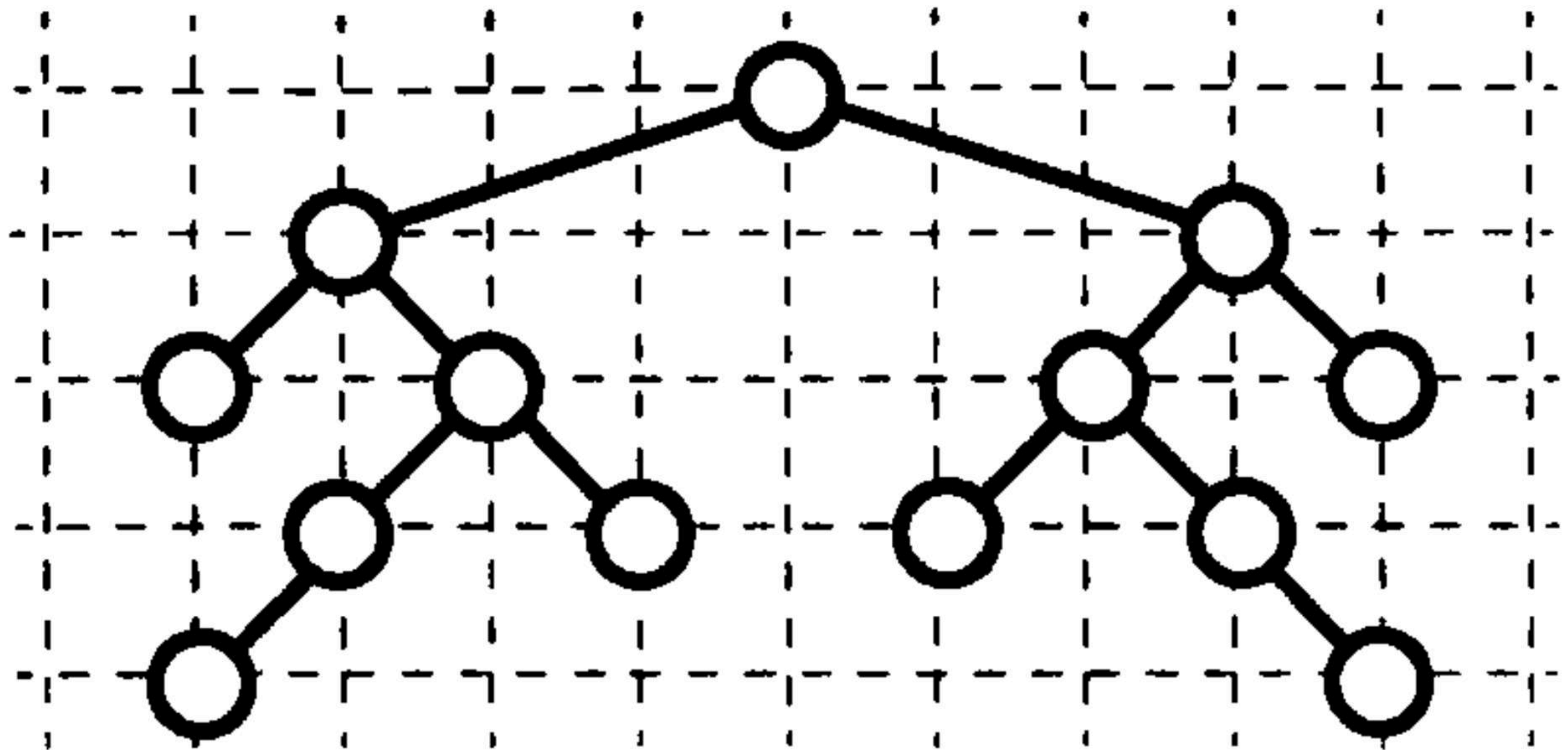
Output: an indication of whether G is planar

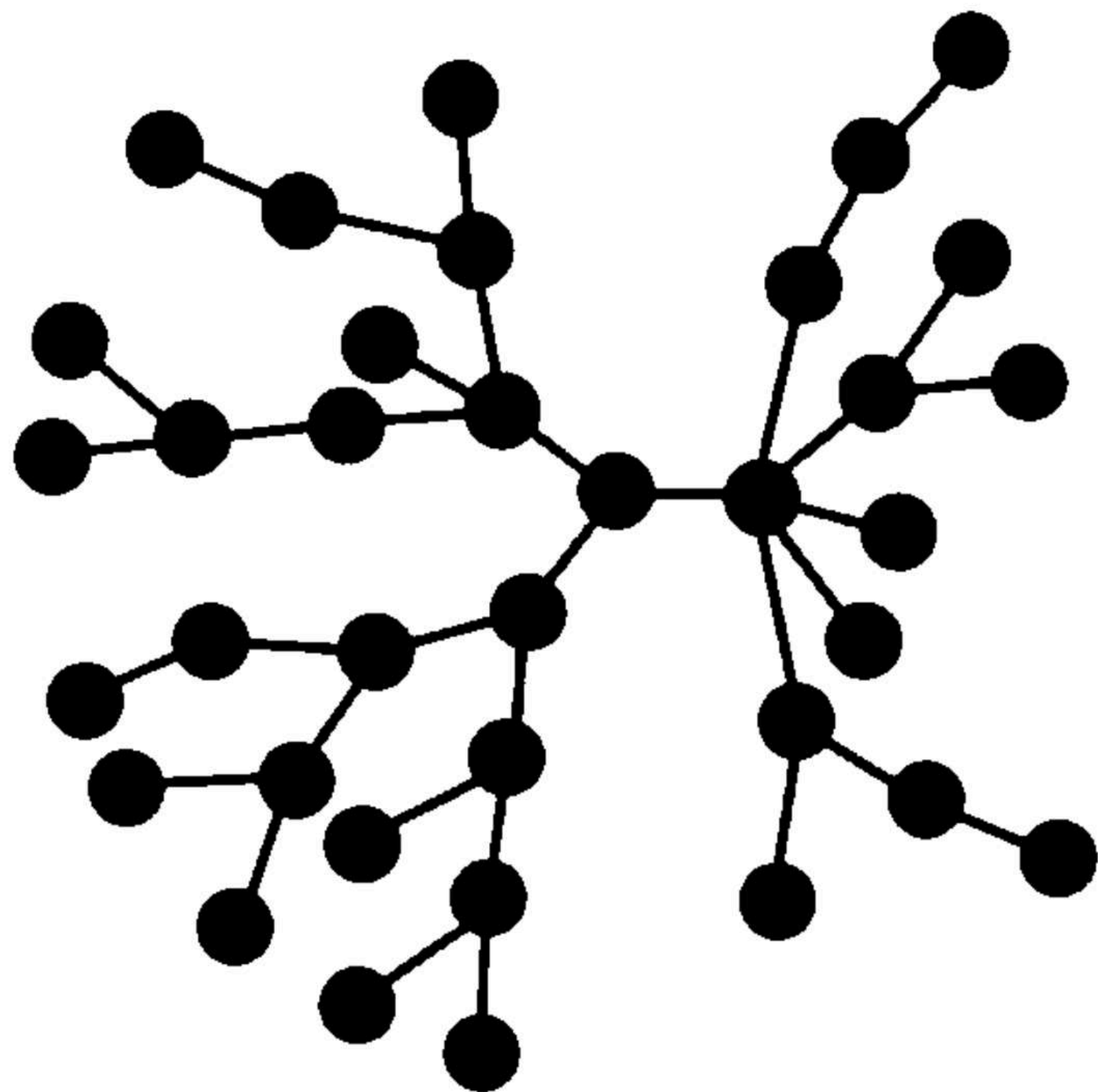
1. Compute the pieces of G with respect to C .
2. For each piece P of G that is not a path (of one or more edges):
 - (a) let P' be the graph obtained by adding P to C
 - (b) let C' be the cycle of P' obtained from C by replacing the portion of C between two consecutive attachments with a path of P between them
 - (c) apply the algorithm recursively to graph P' and cycle C' . If P' is nonplanar, return “nonplanar”.
3. Compute the interlacement graph I of the pieces.
4. Test whether I is bipartite. If I is not bipartite, return “nonplanar”.
5. Return “planar”.

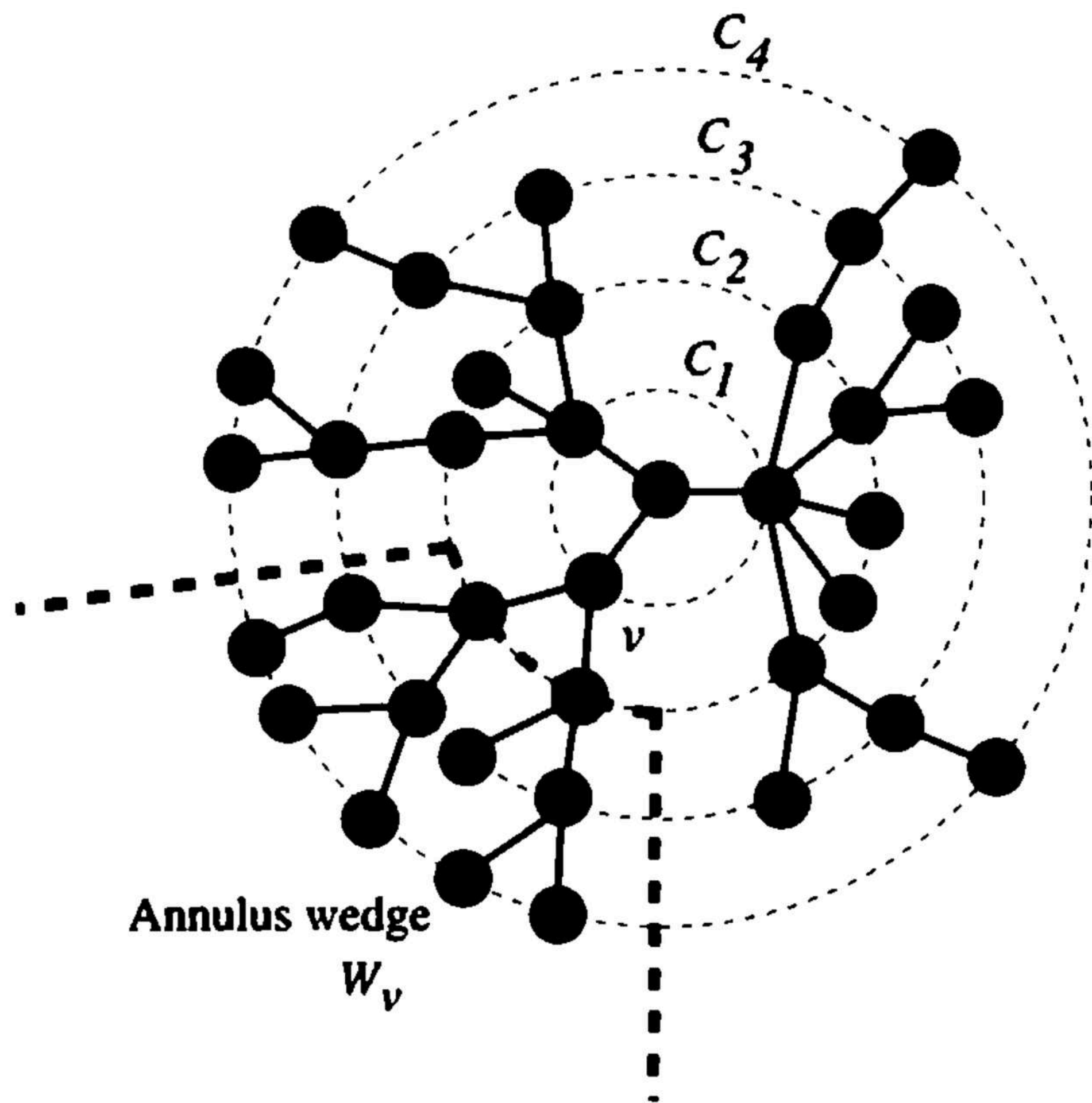
□

Drawing Planar Graphs

Rooted Tree







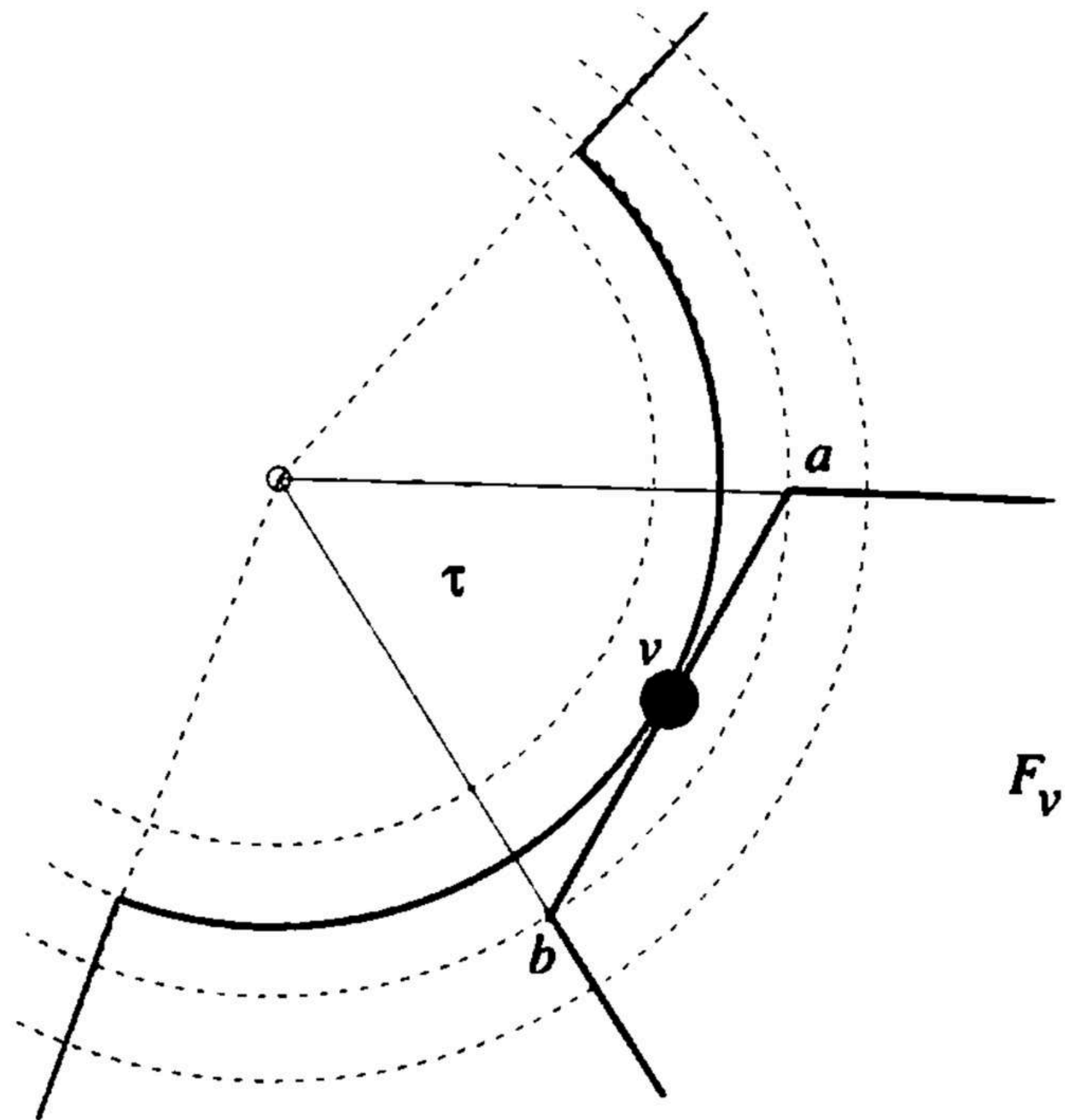
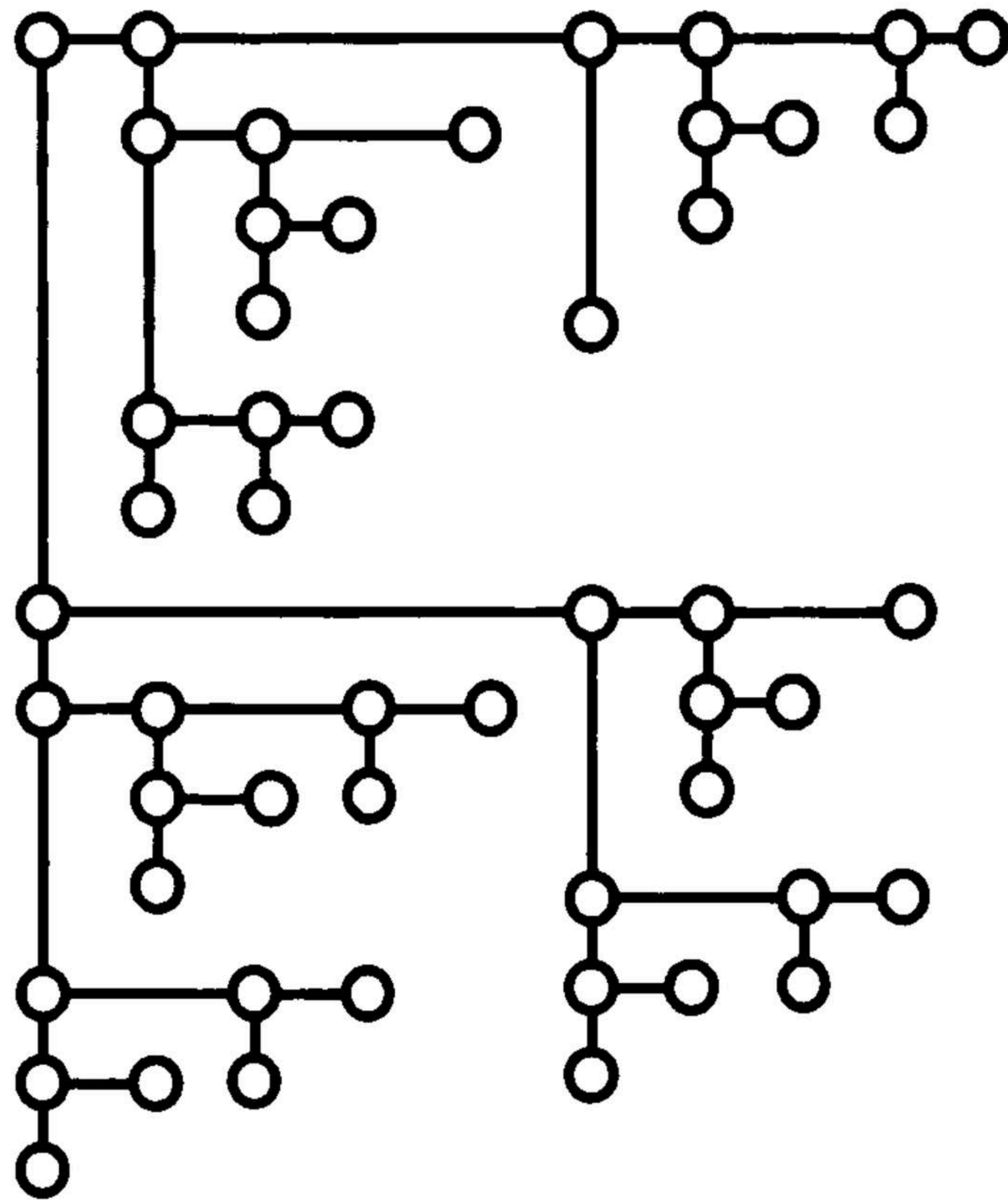
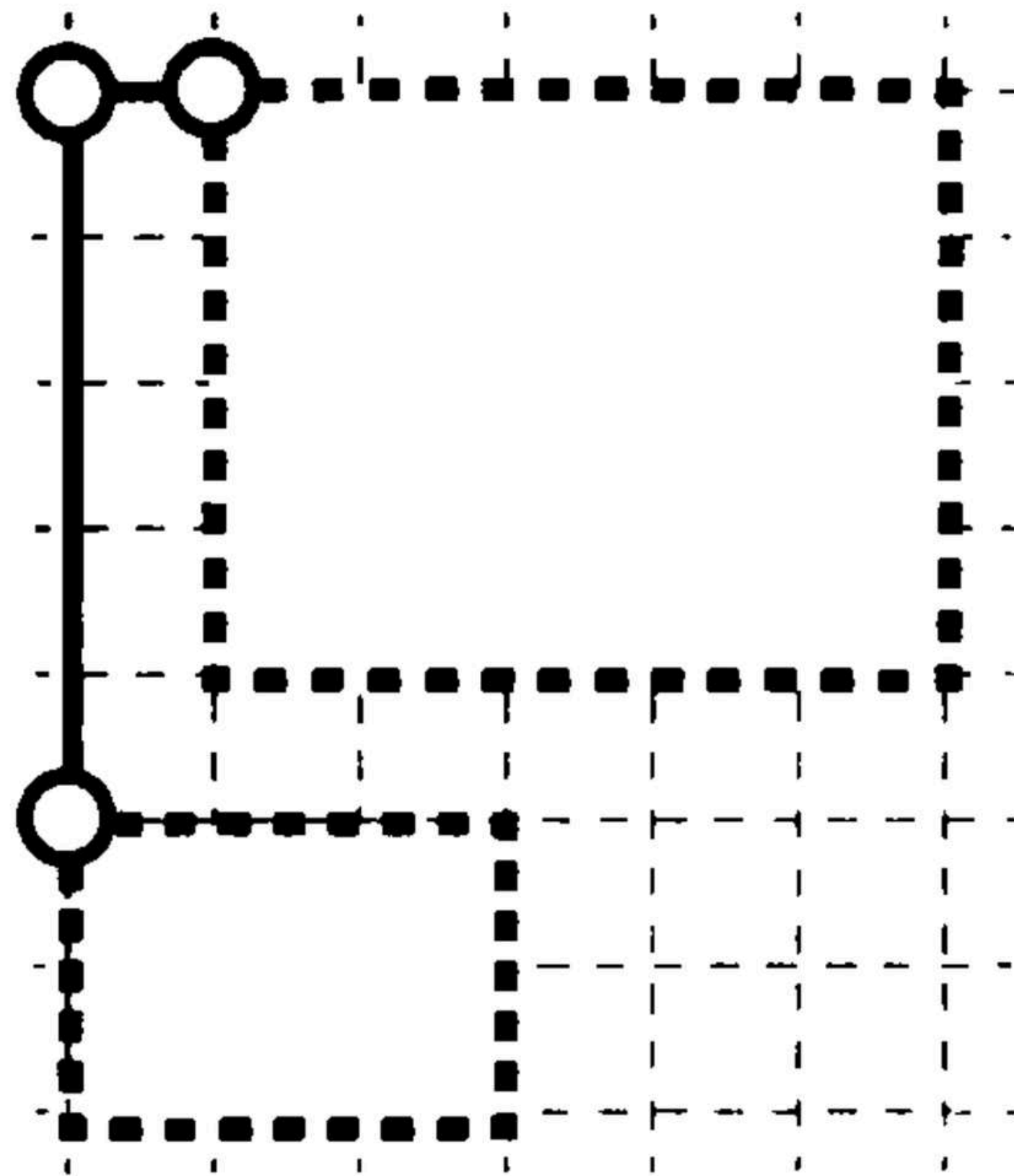
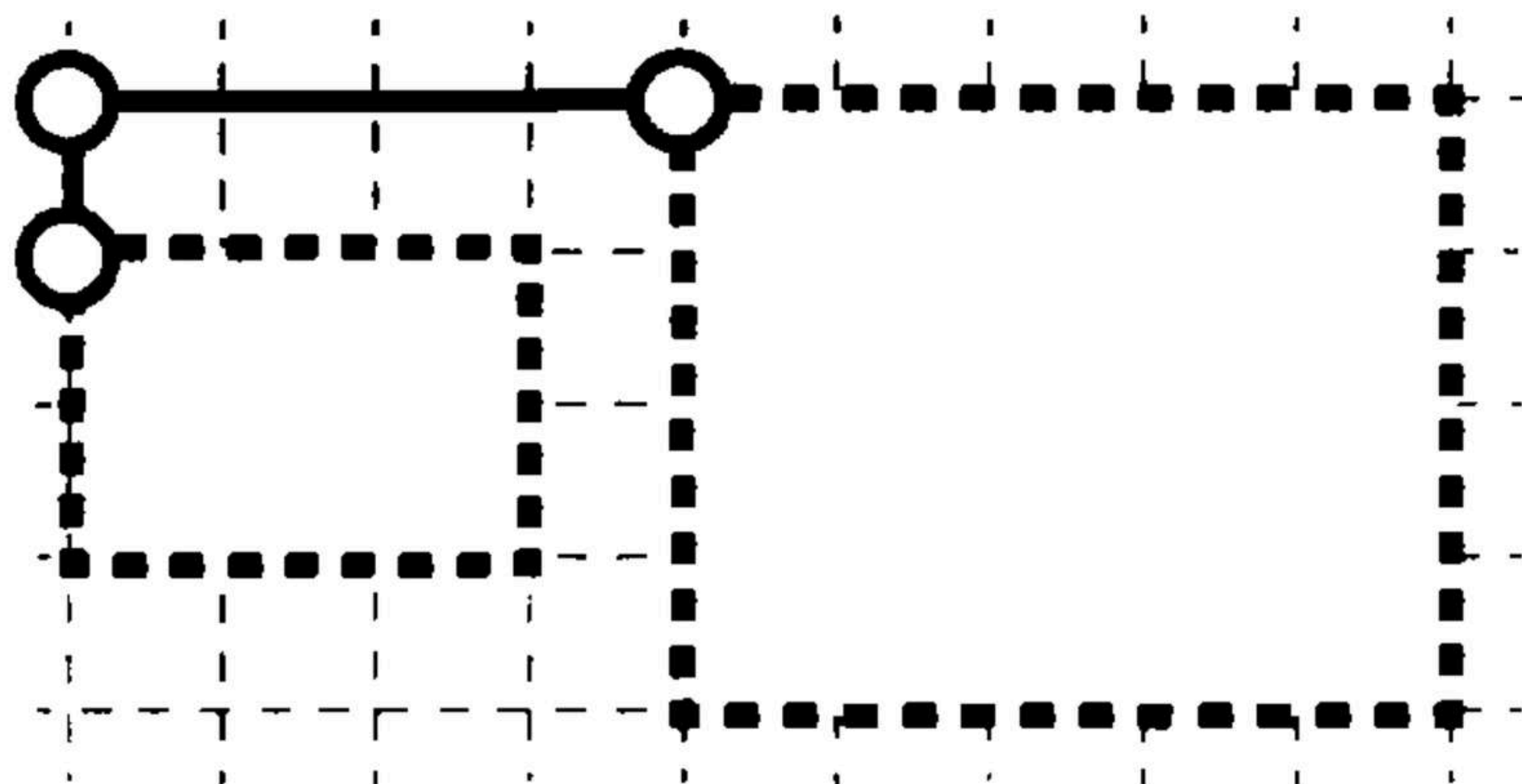
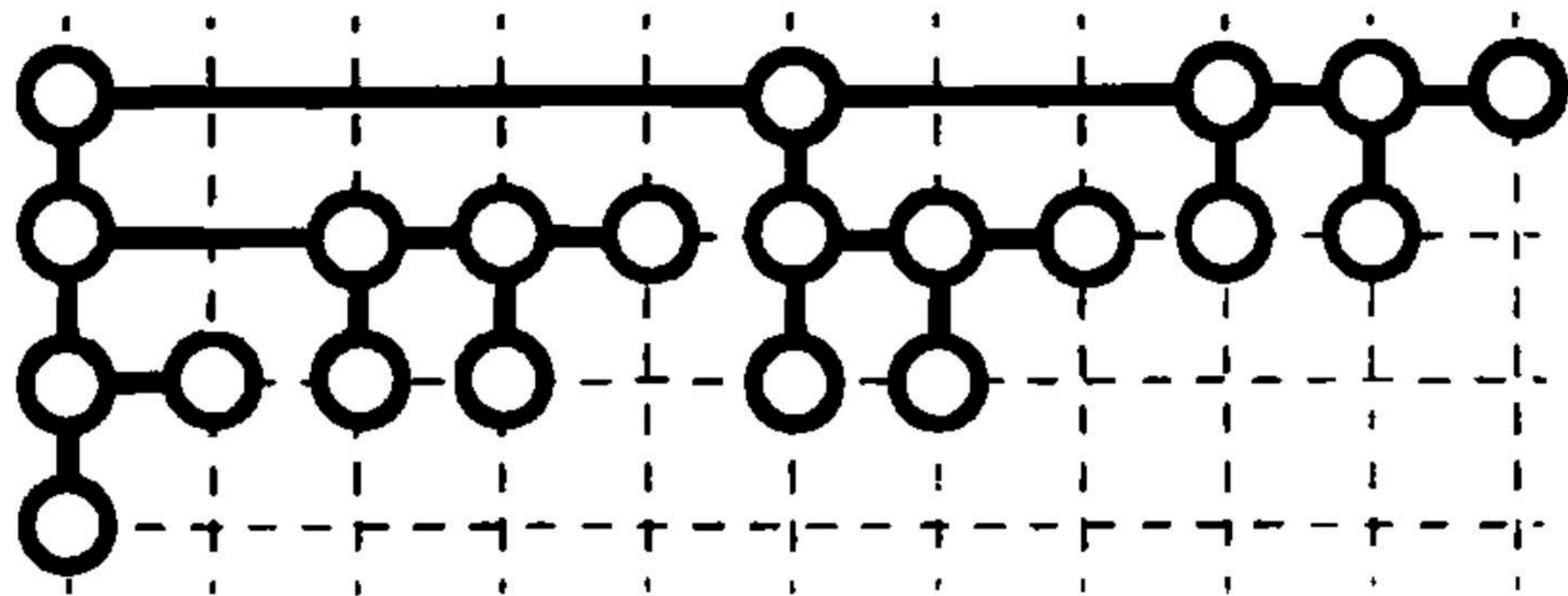


Figure 3.10: Convex subset of the wedge.







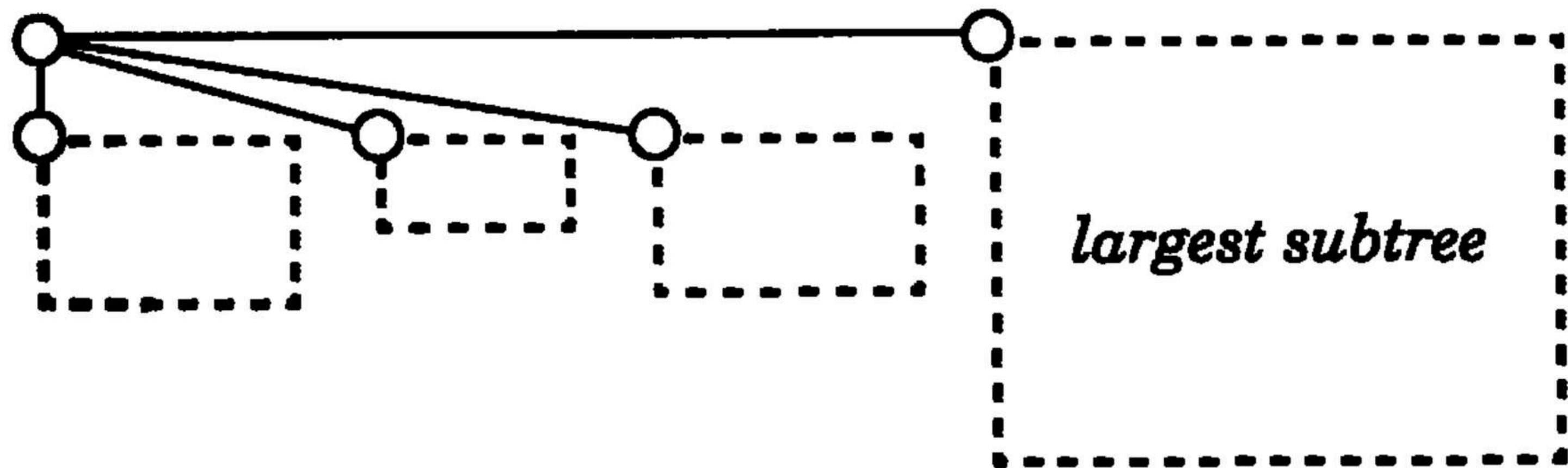


Figure 3.16: Extension of Algorithm 3.2 *Right-Heavy-HV-Tree-Draw* to general rooted trees.

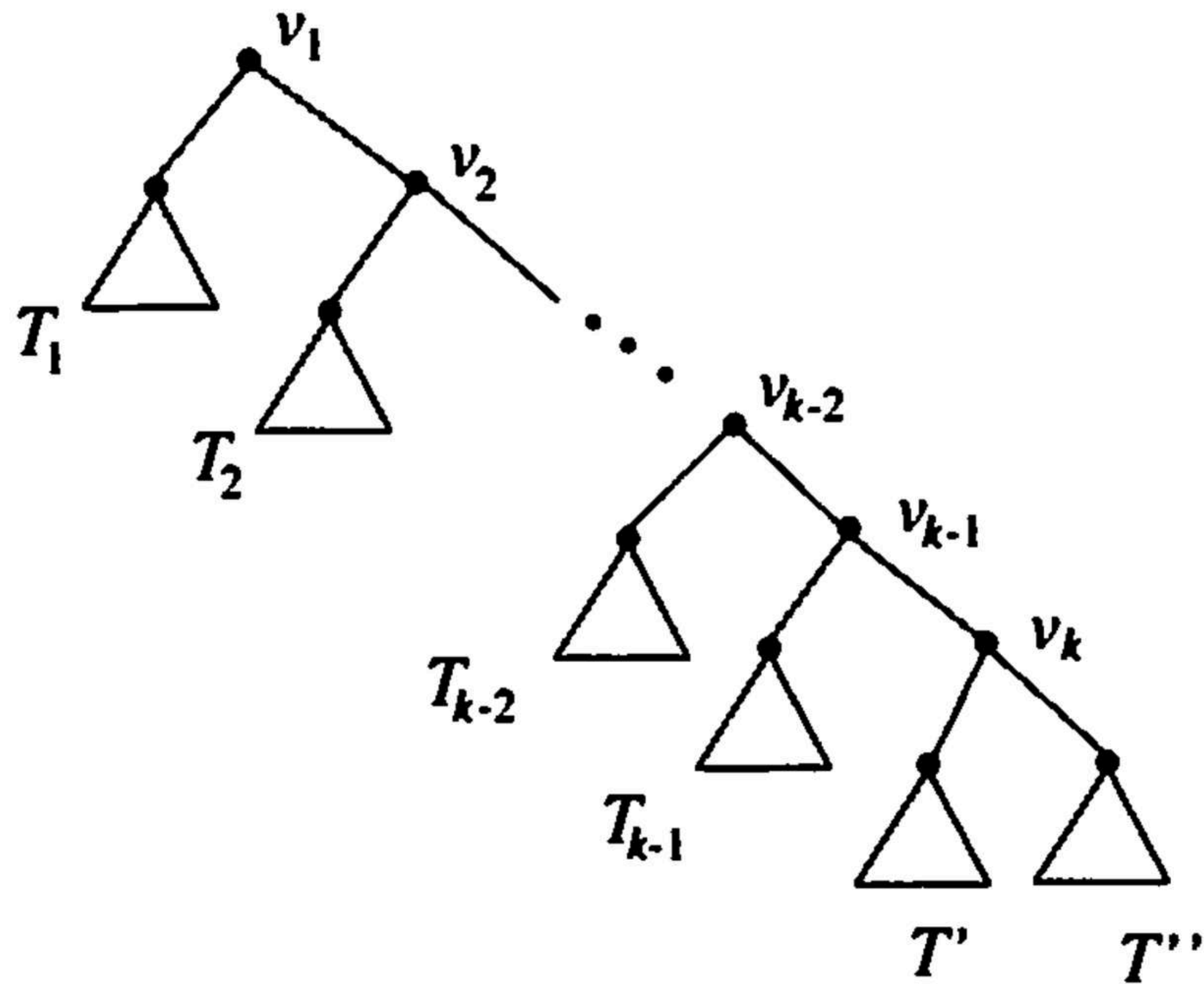
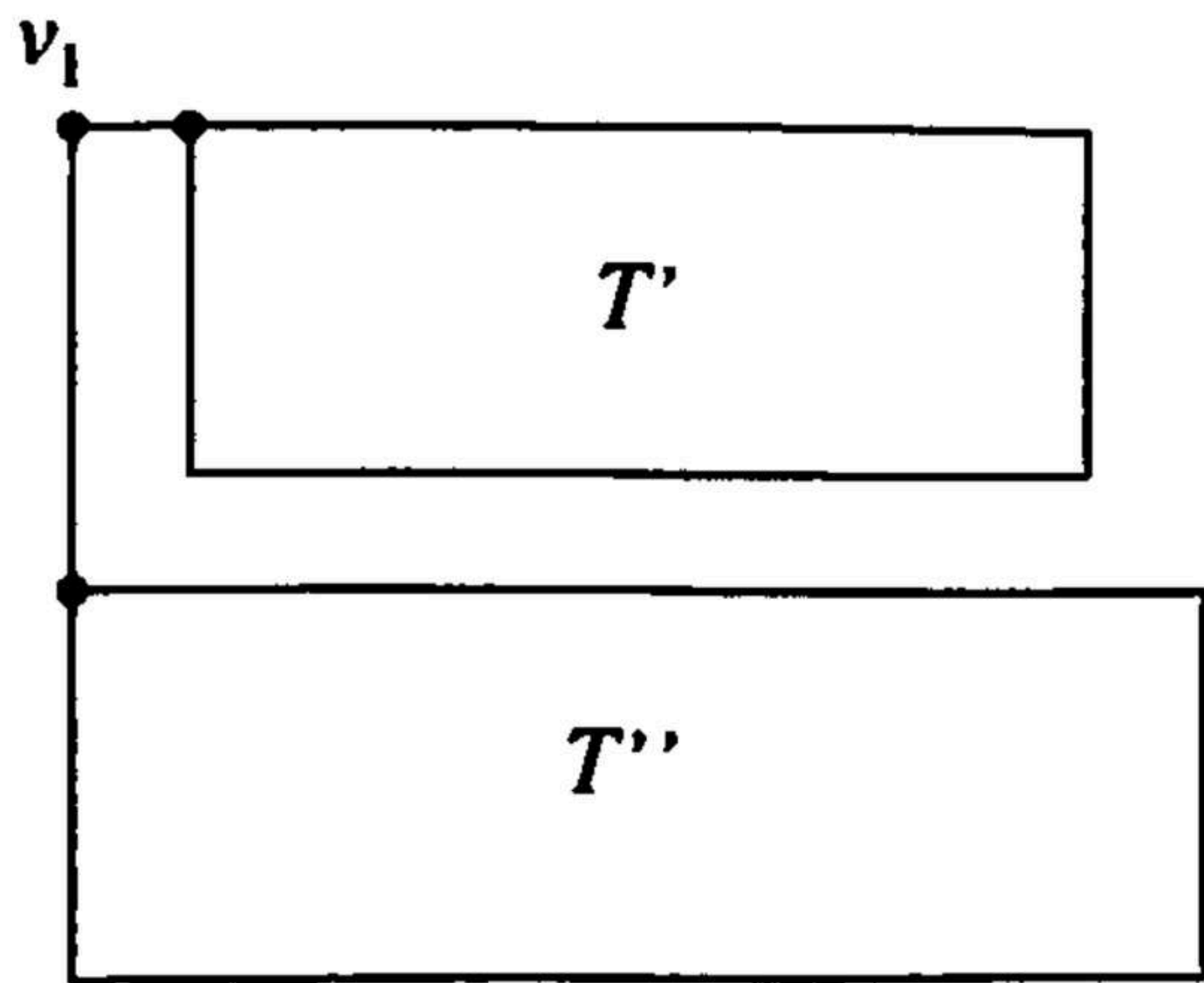
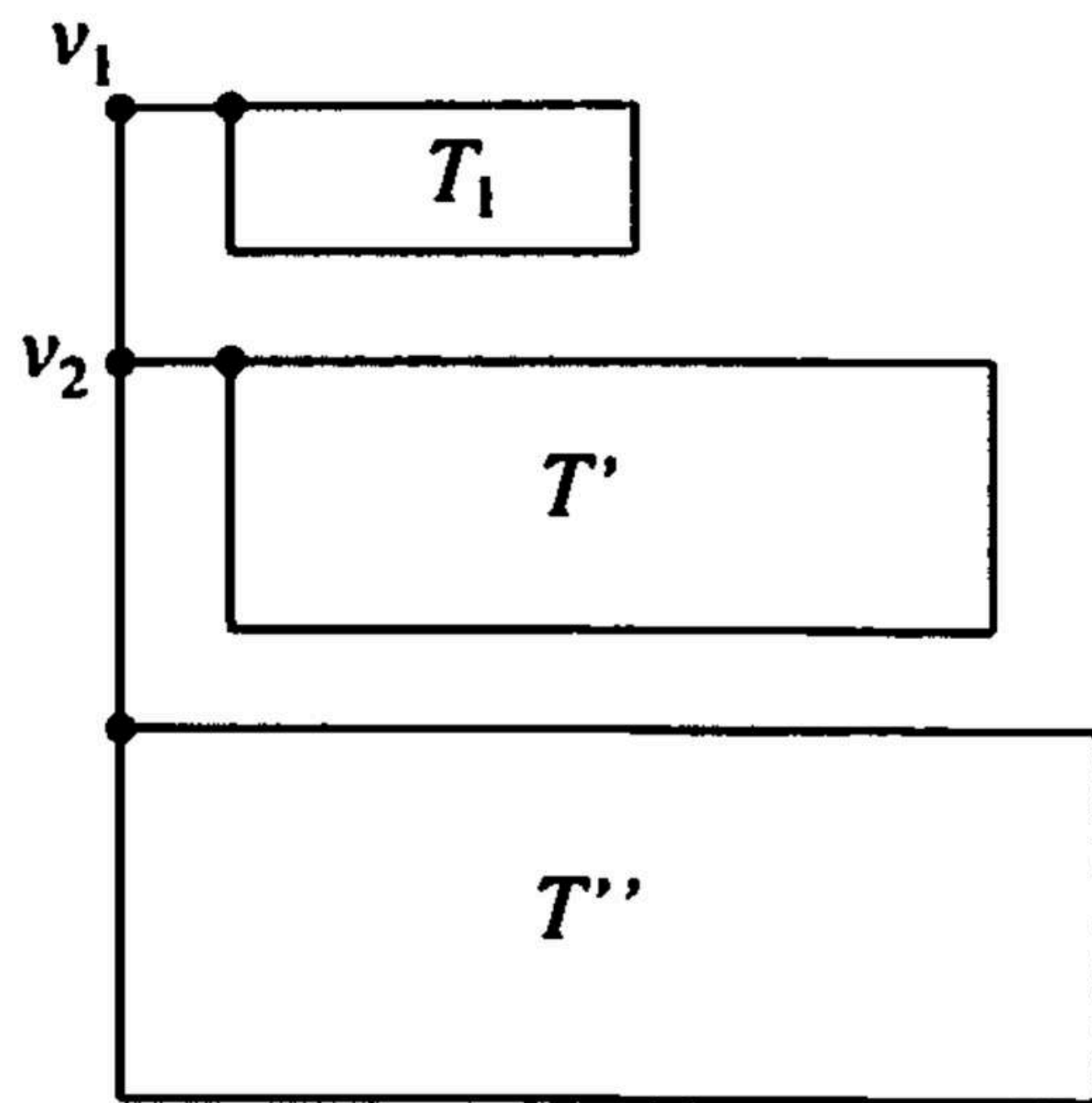


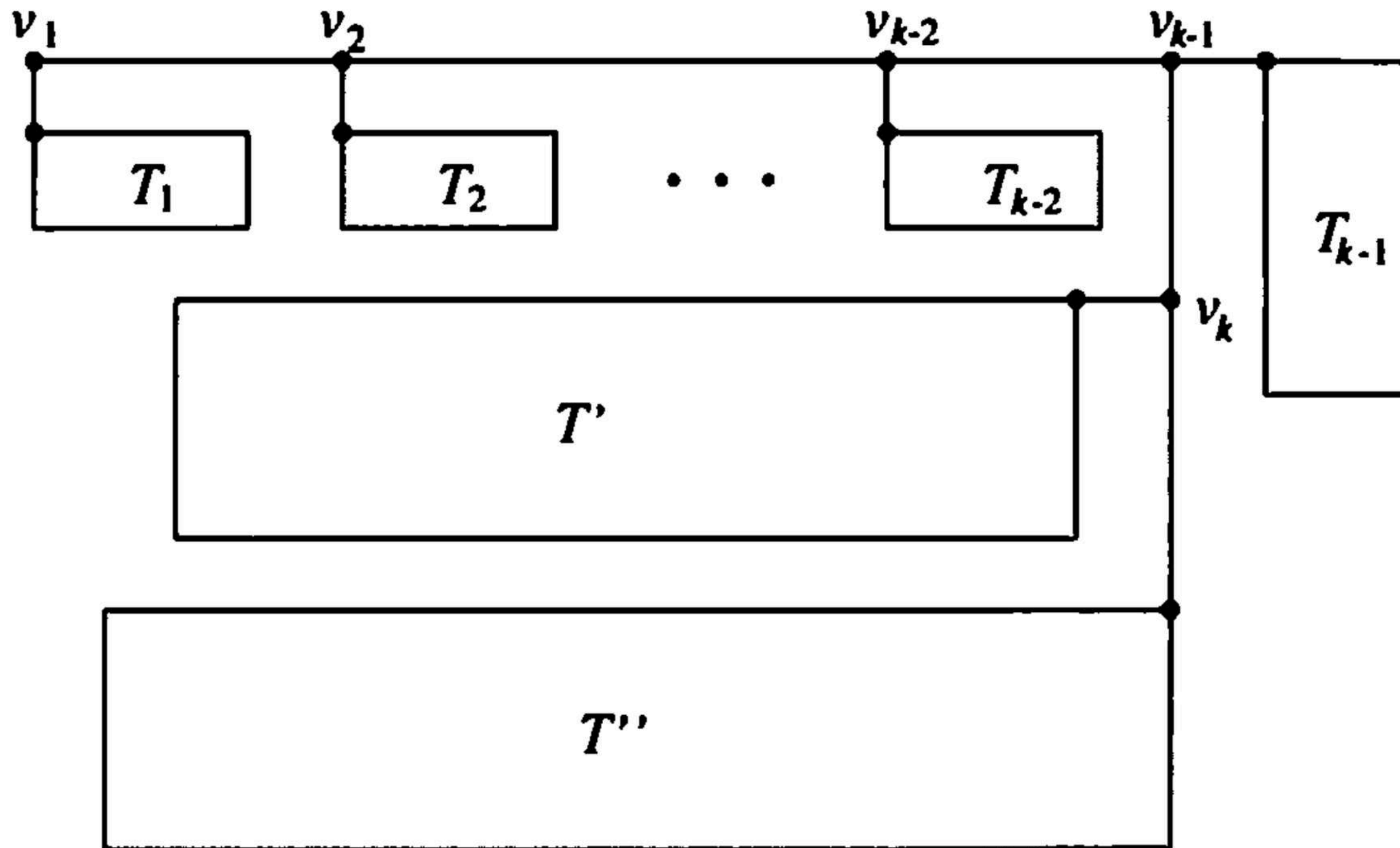
Figure 3.17: Structure of binary tree T .



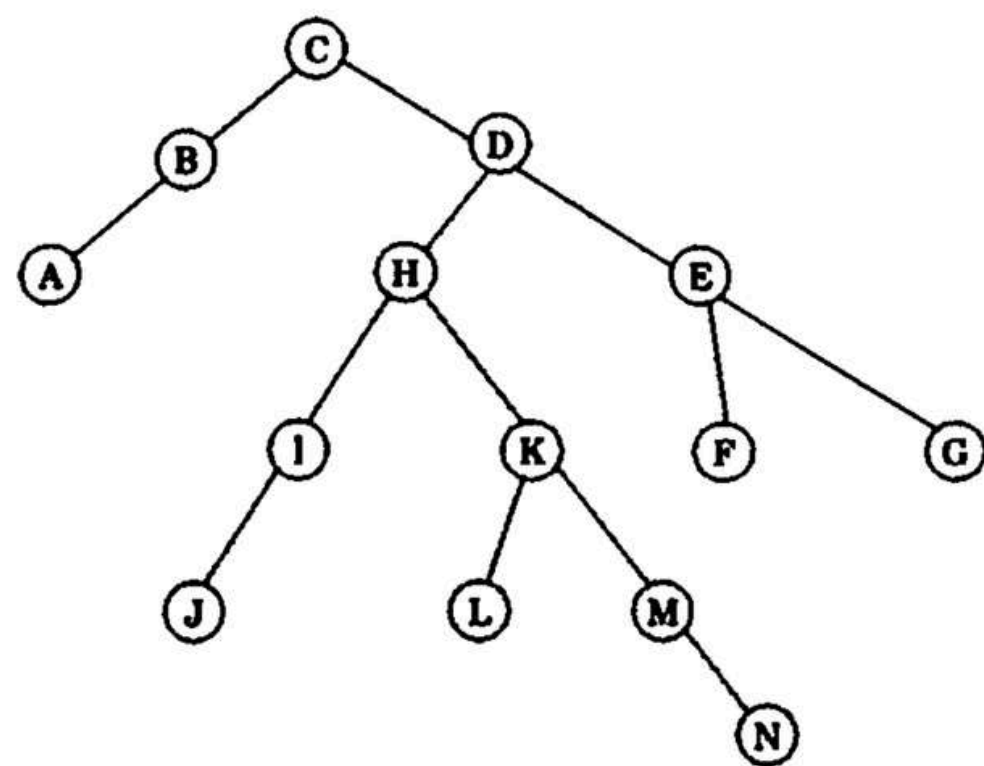
(a) $k = 1$



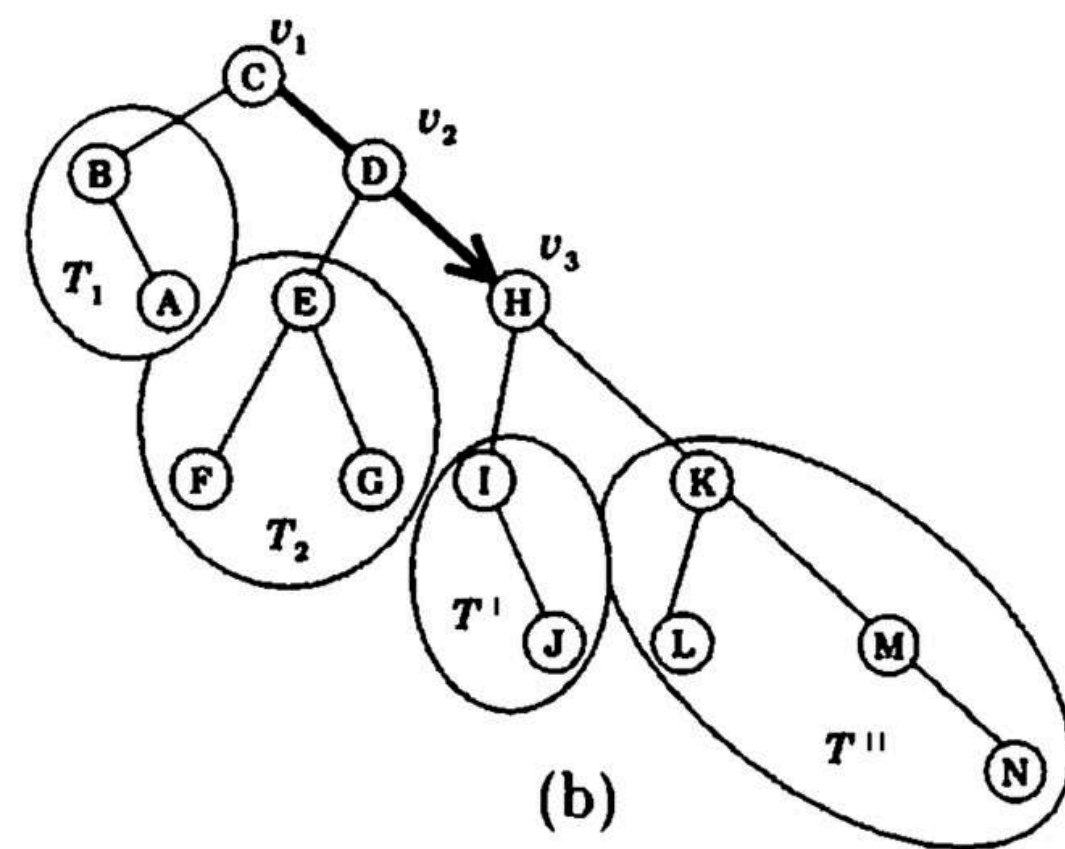
(b) $k = 2$



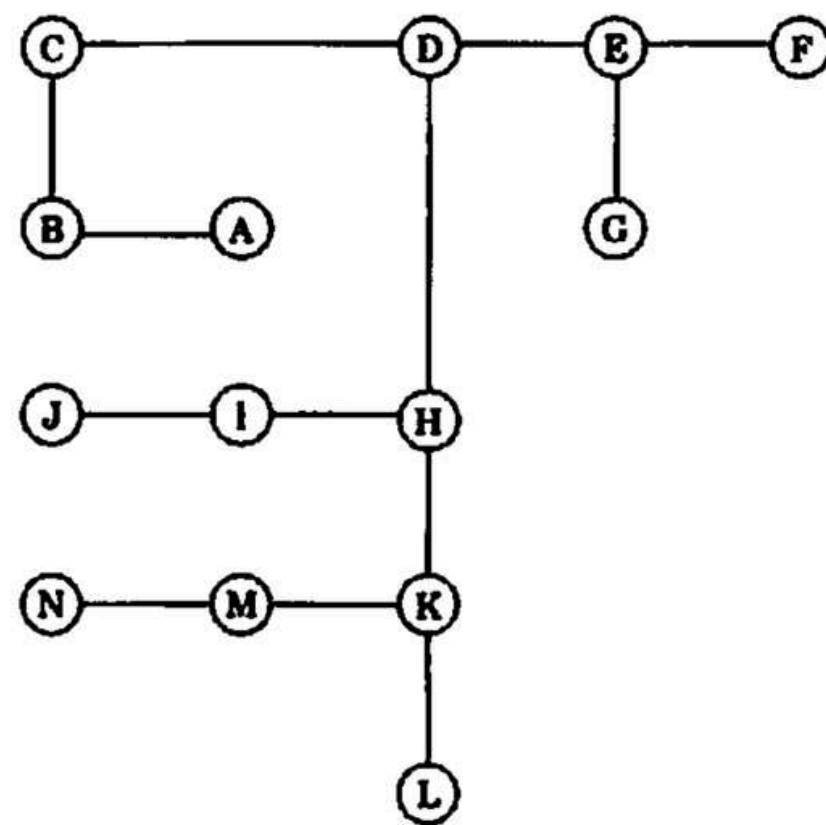
(c) $k > 2$



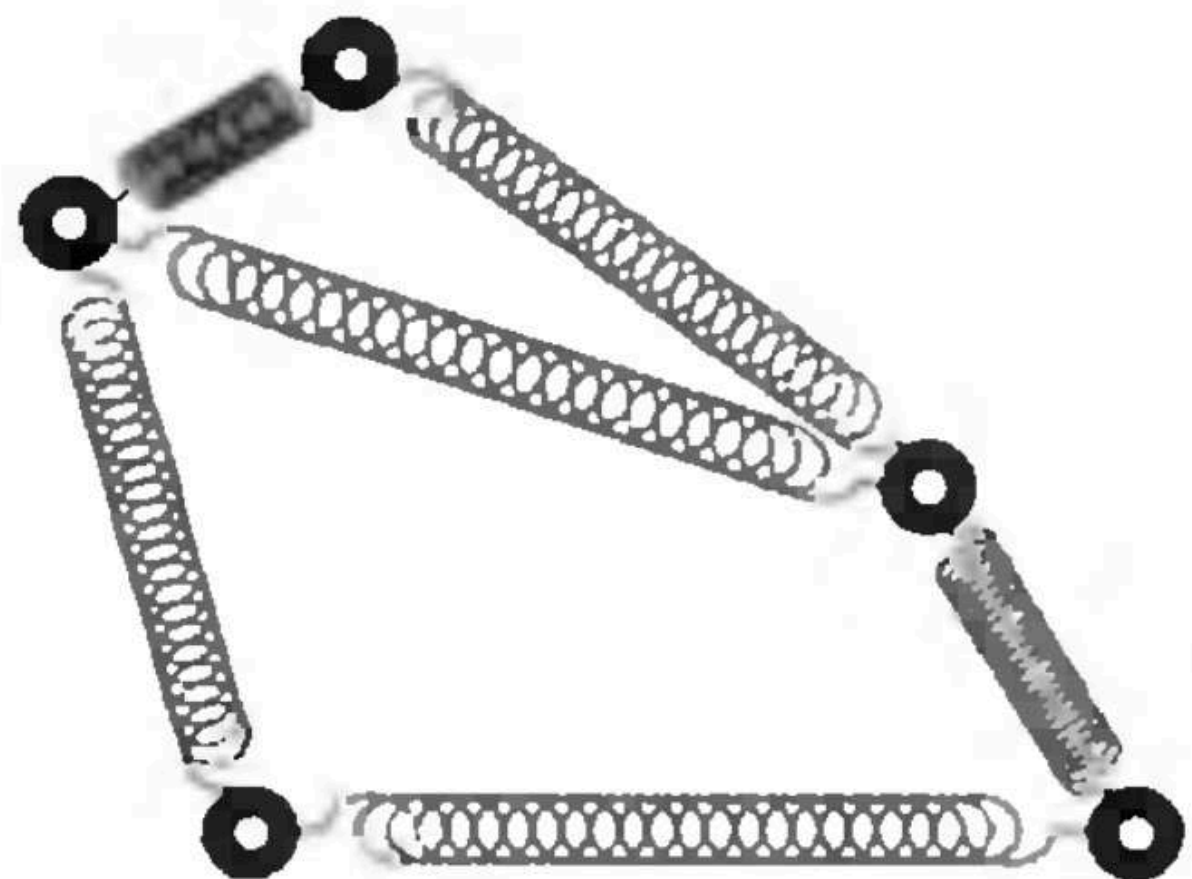
(a)

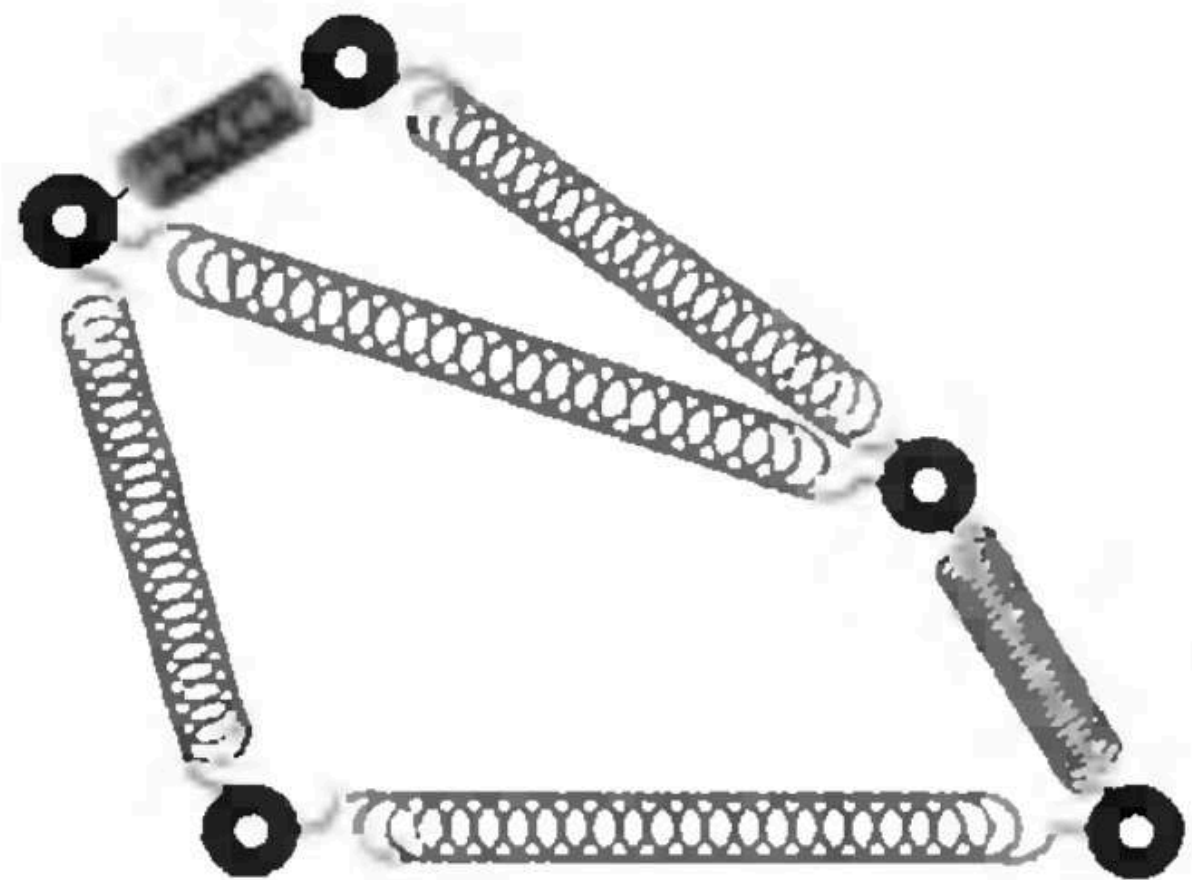


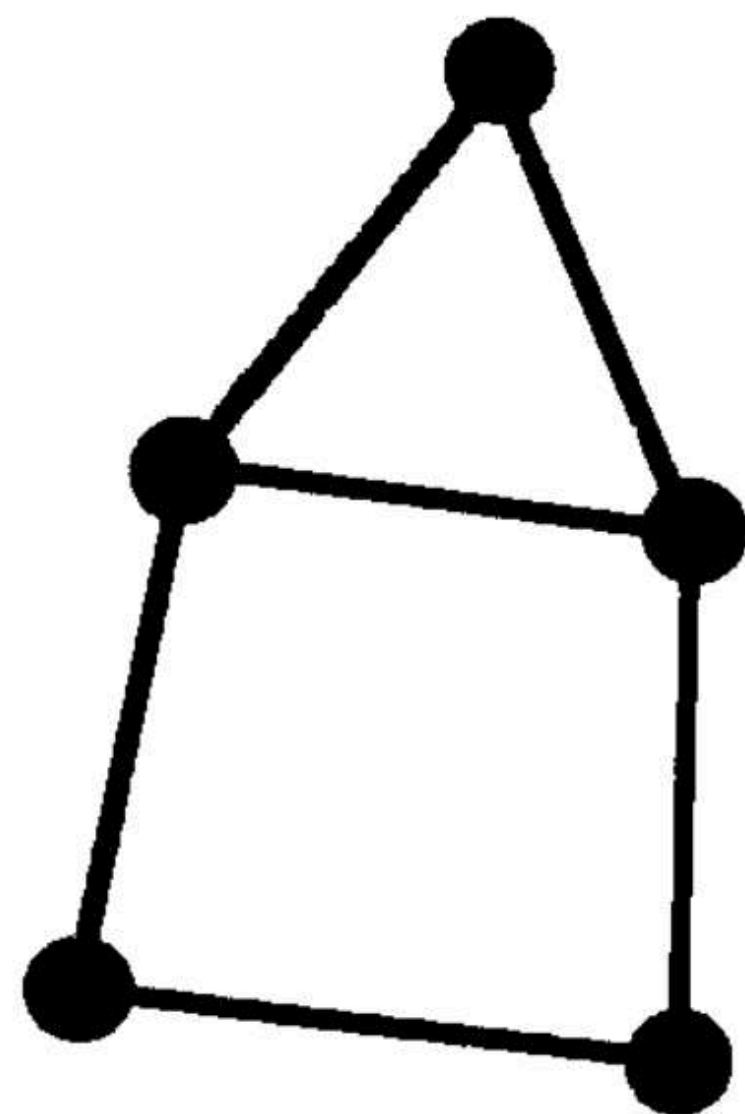
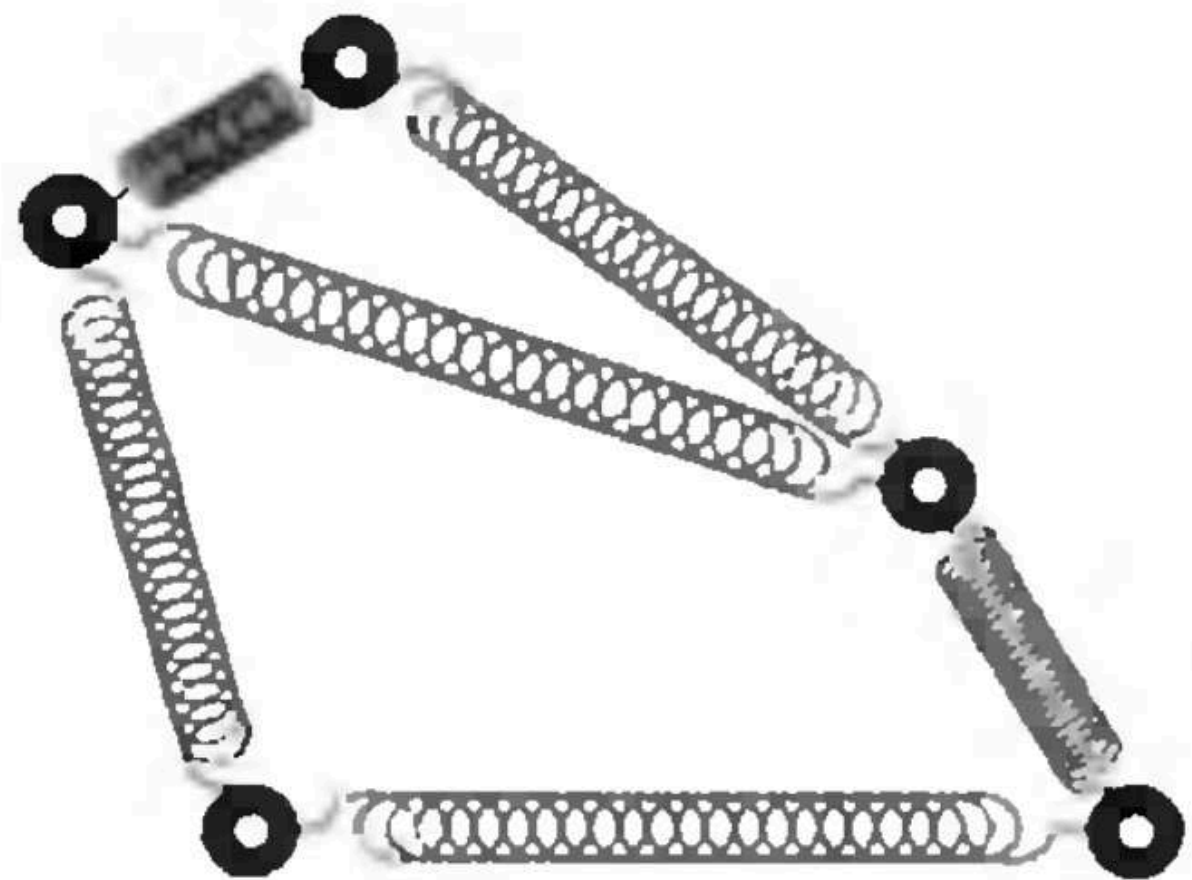
(b)

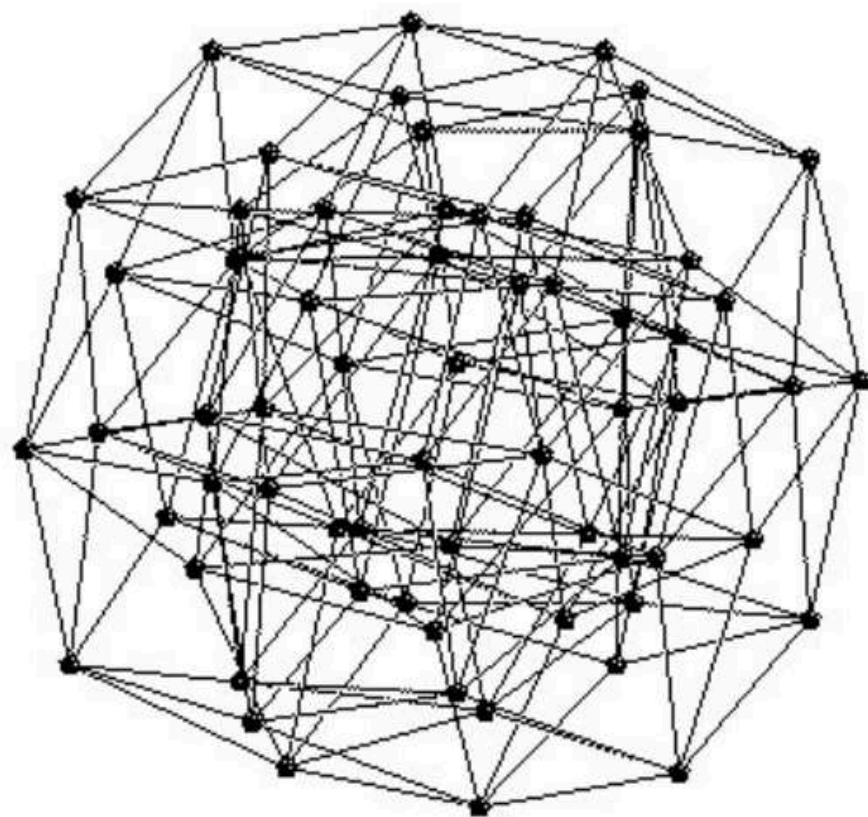
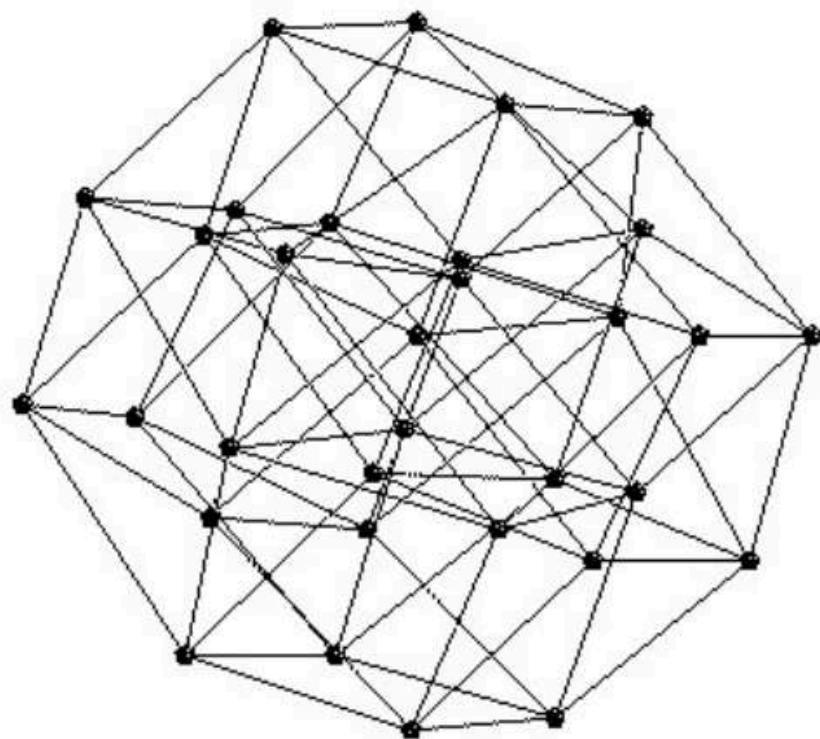
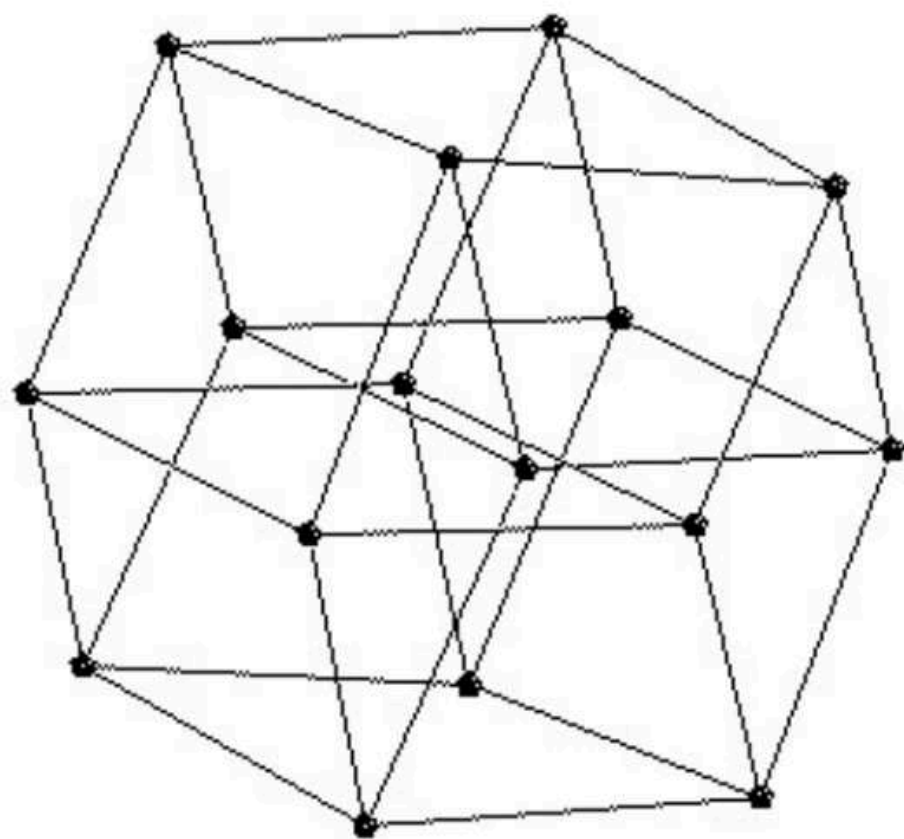
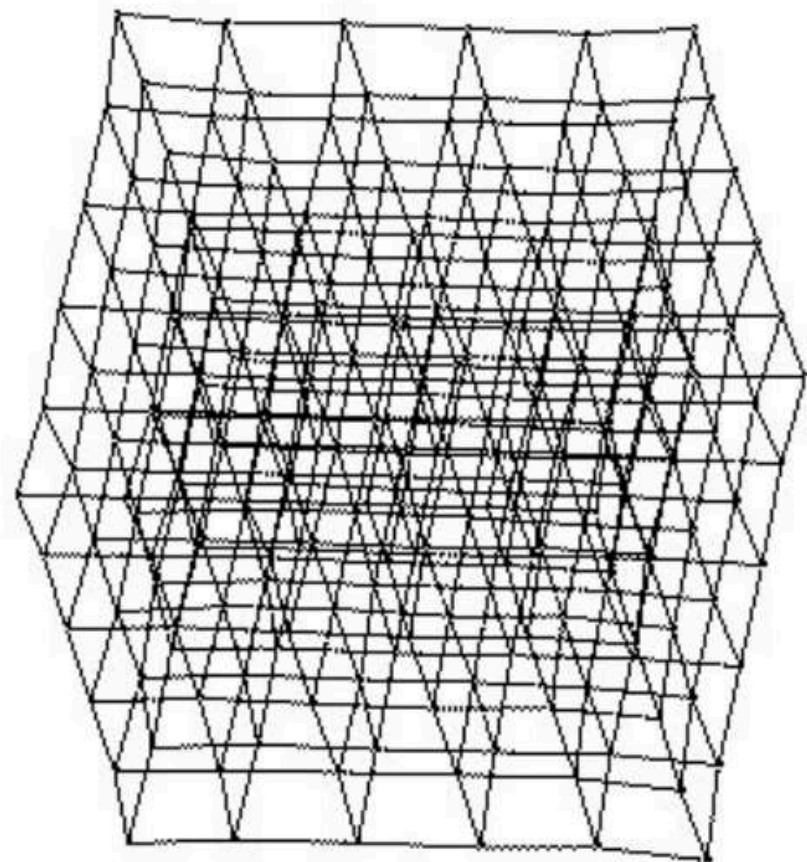
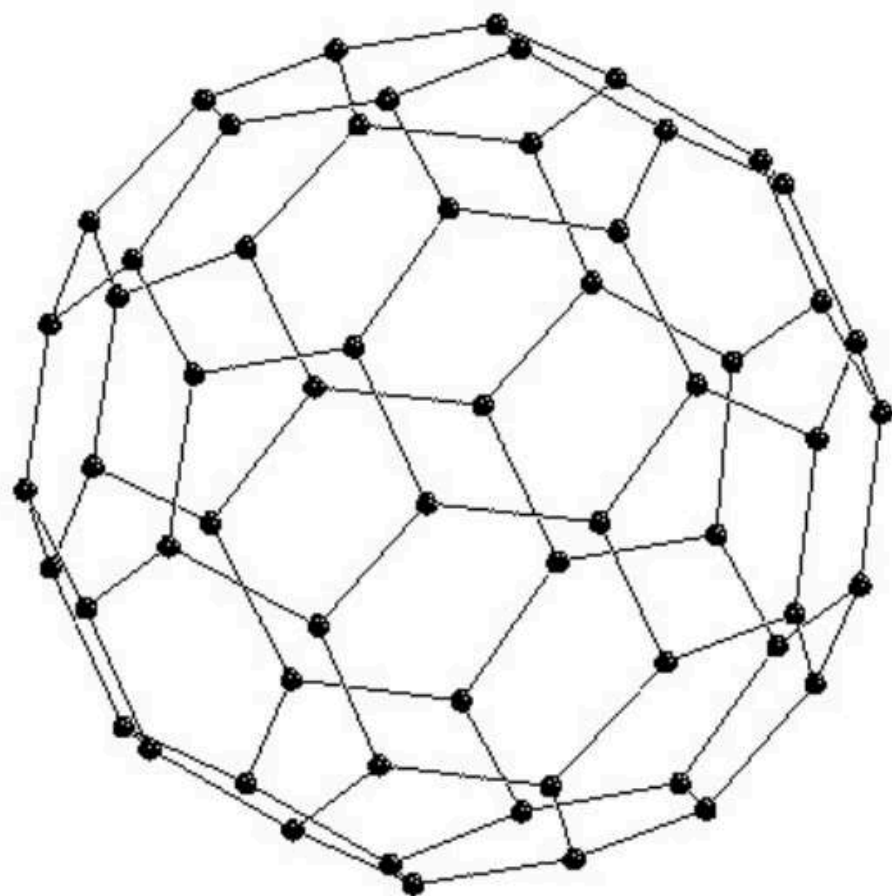
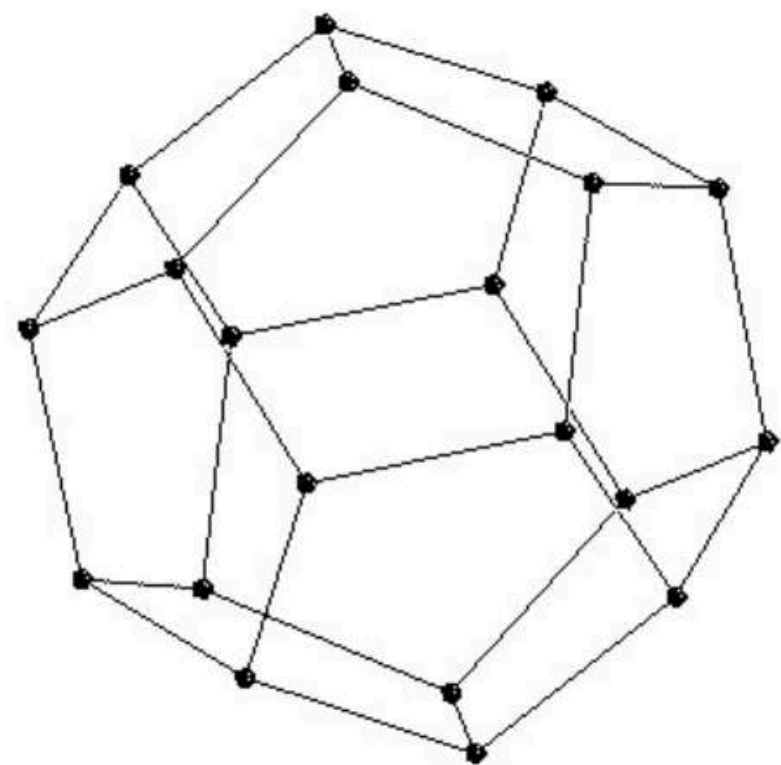


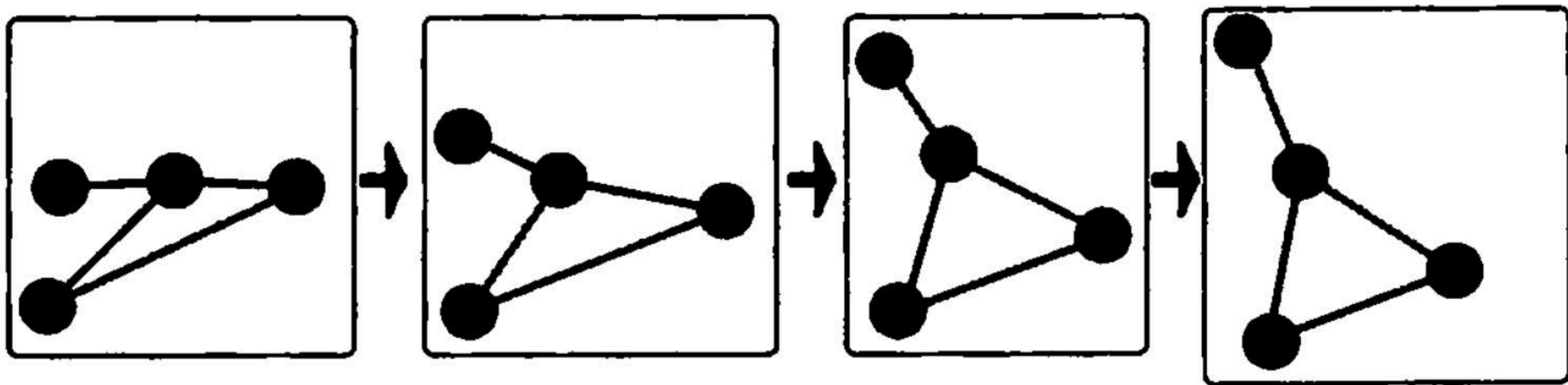
Force Directed Methods

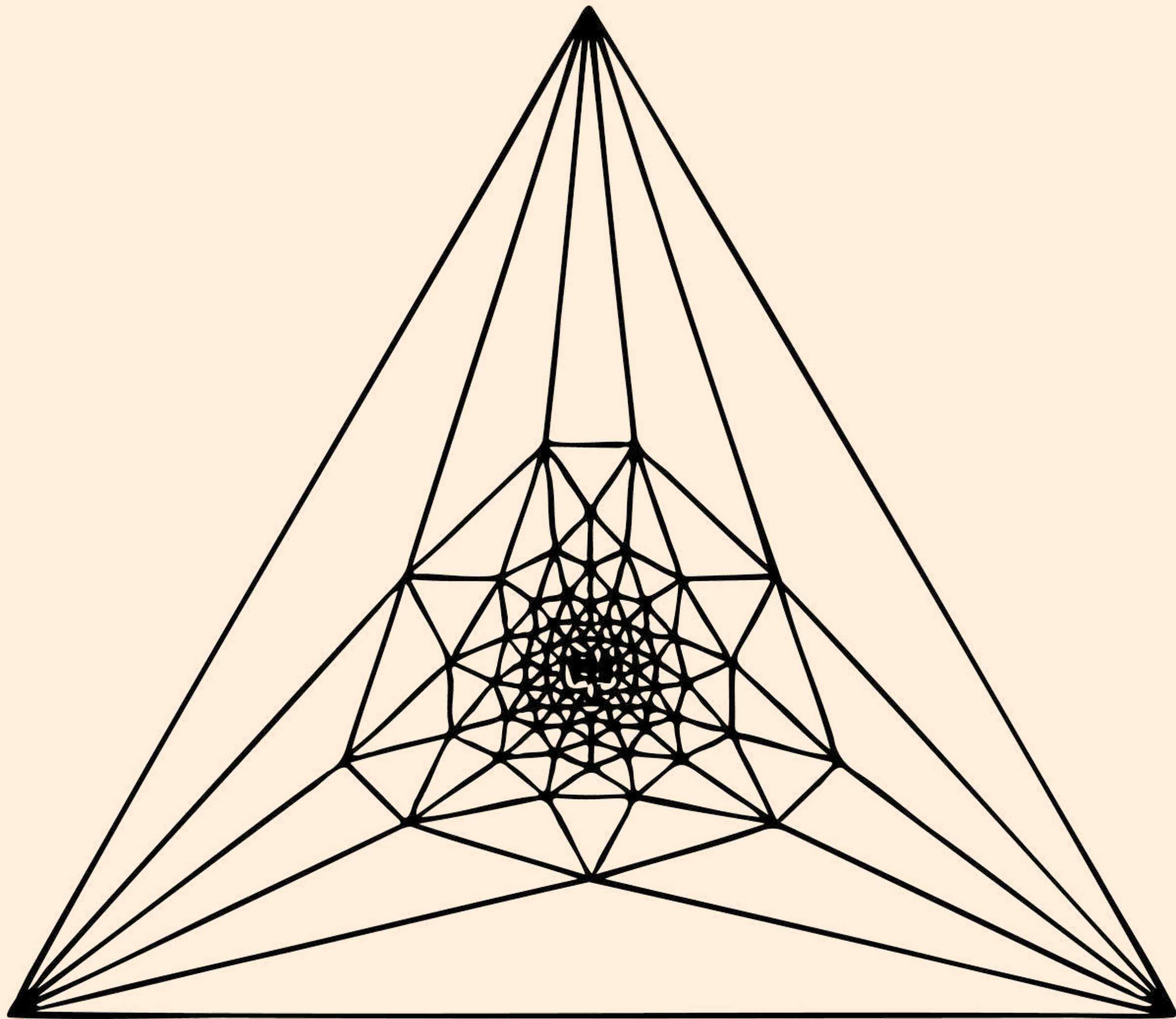


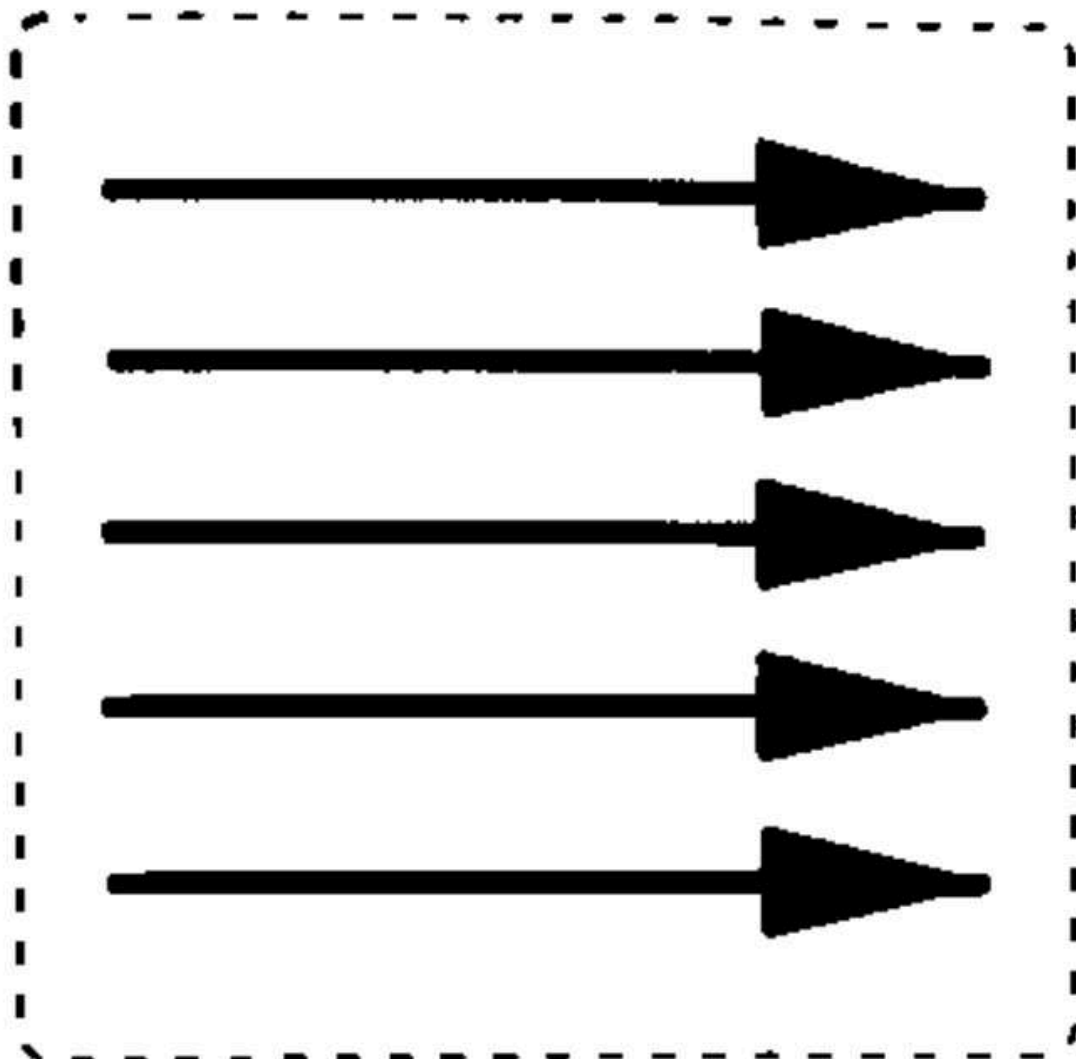




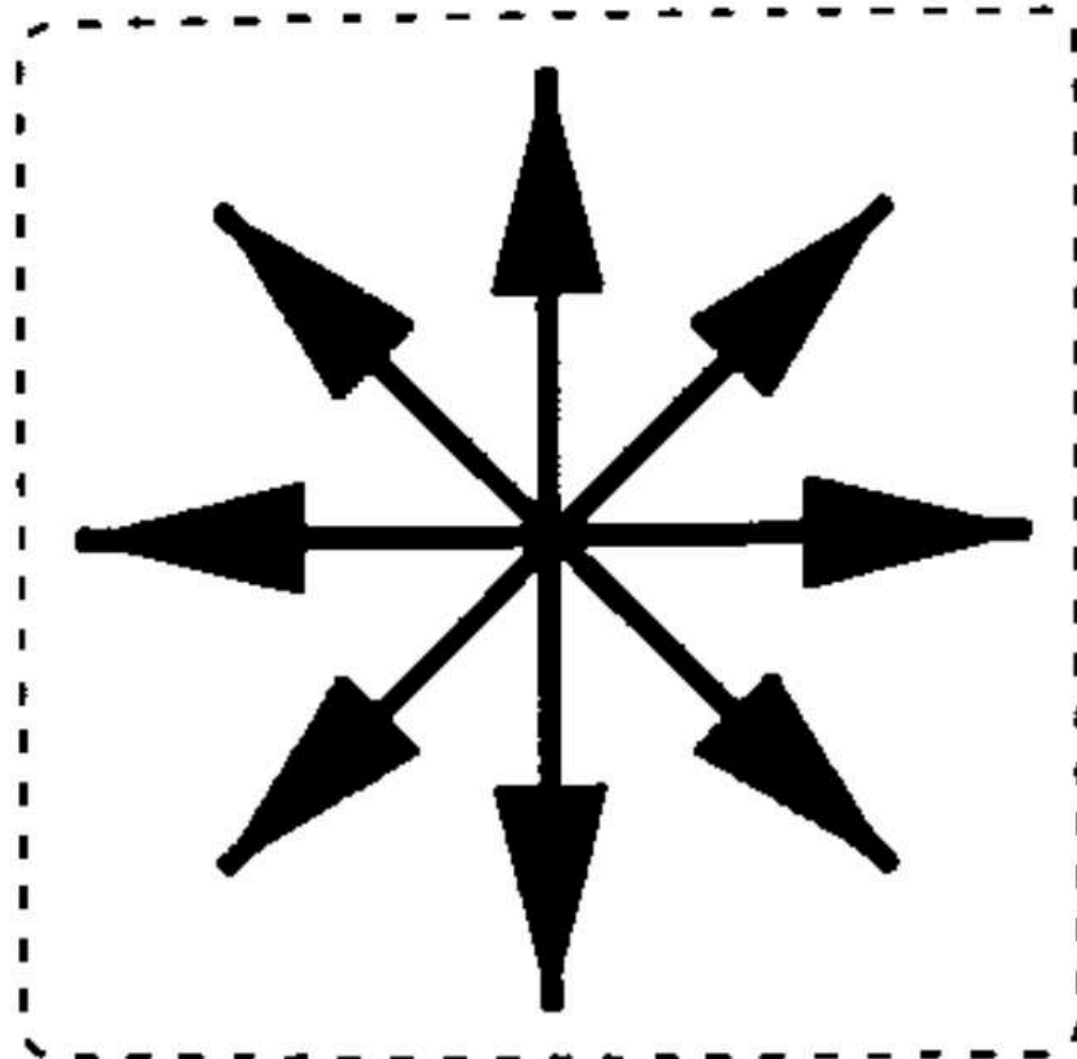




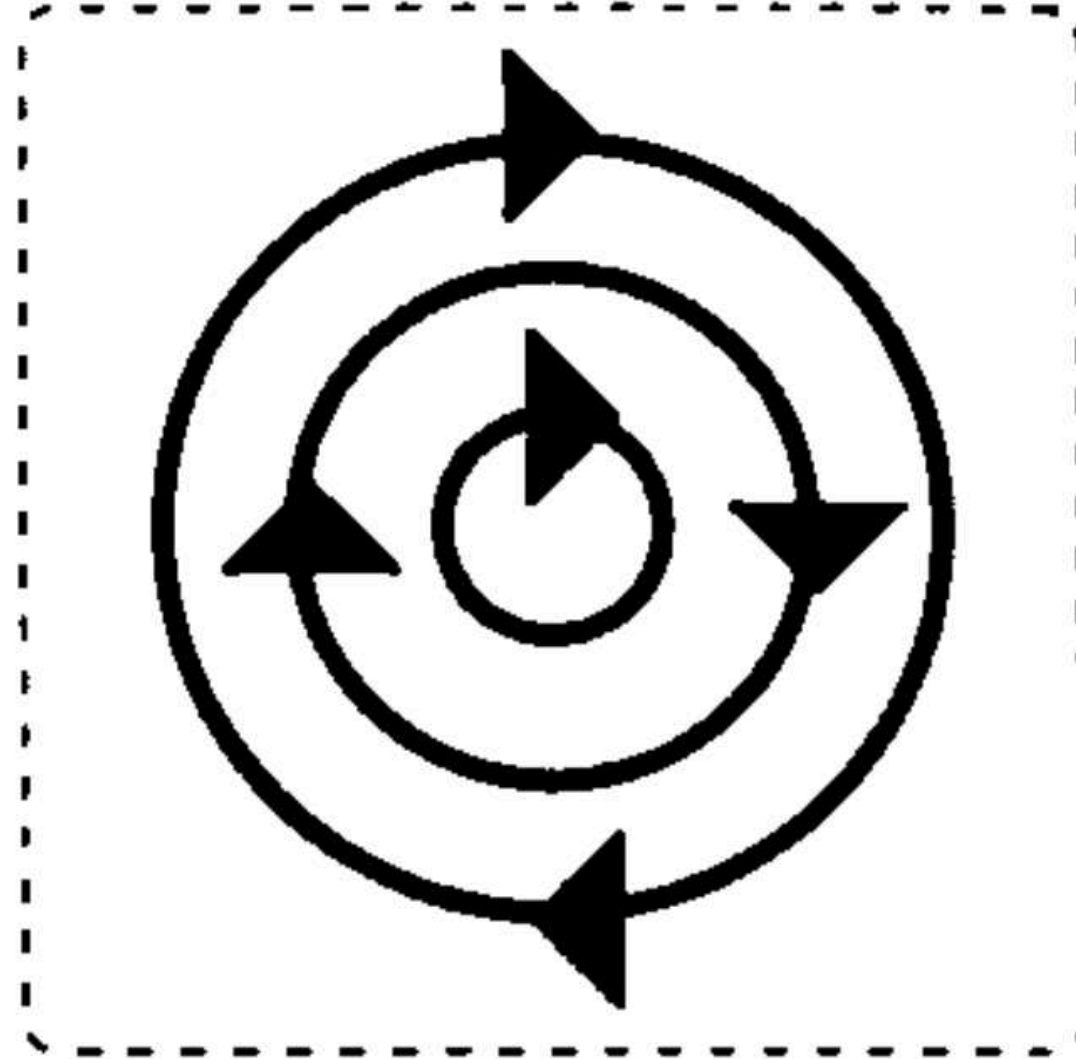




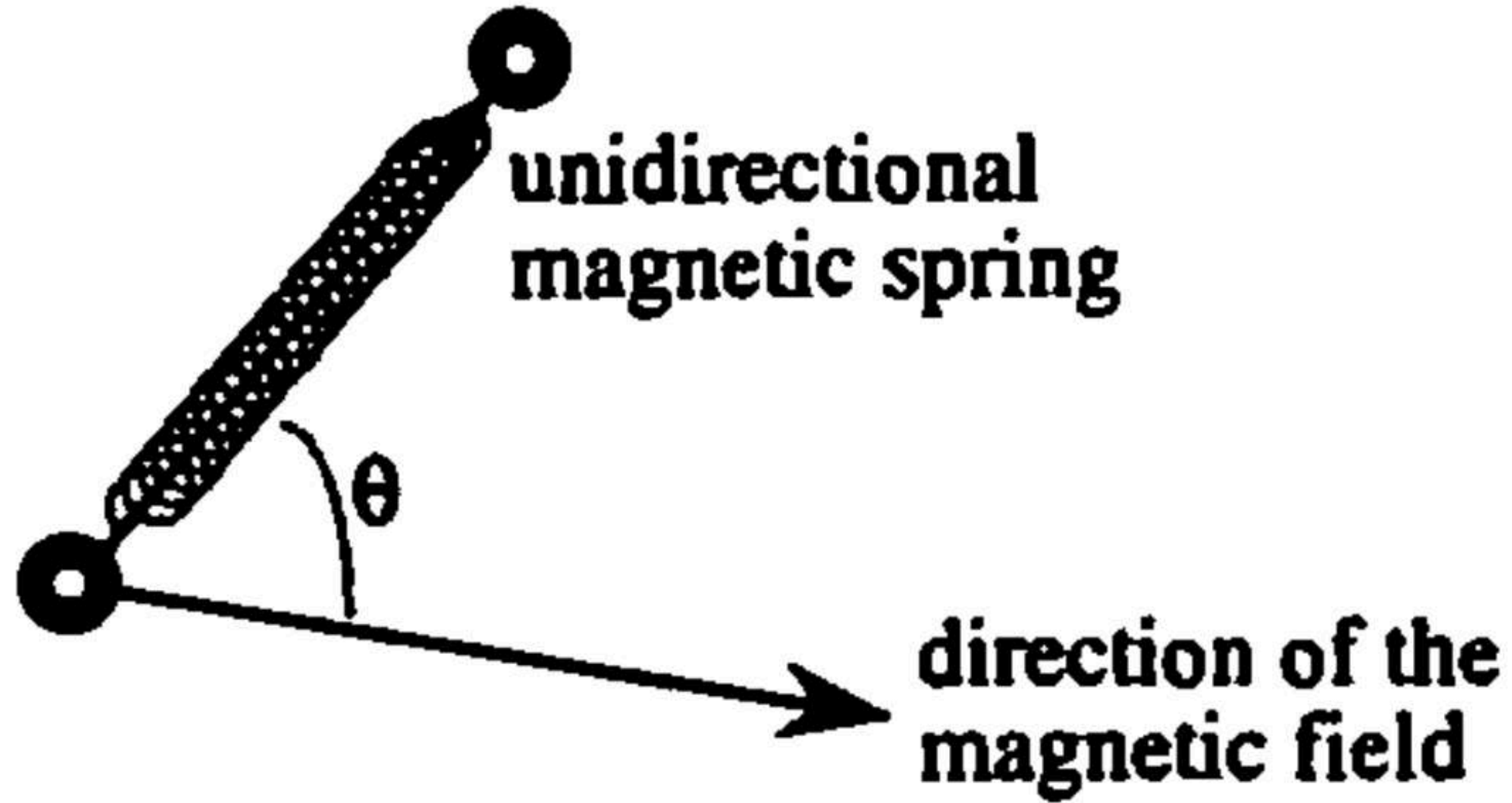
Parallel



Radial



Concentric



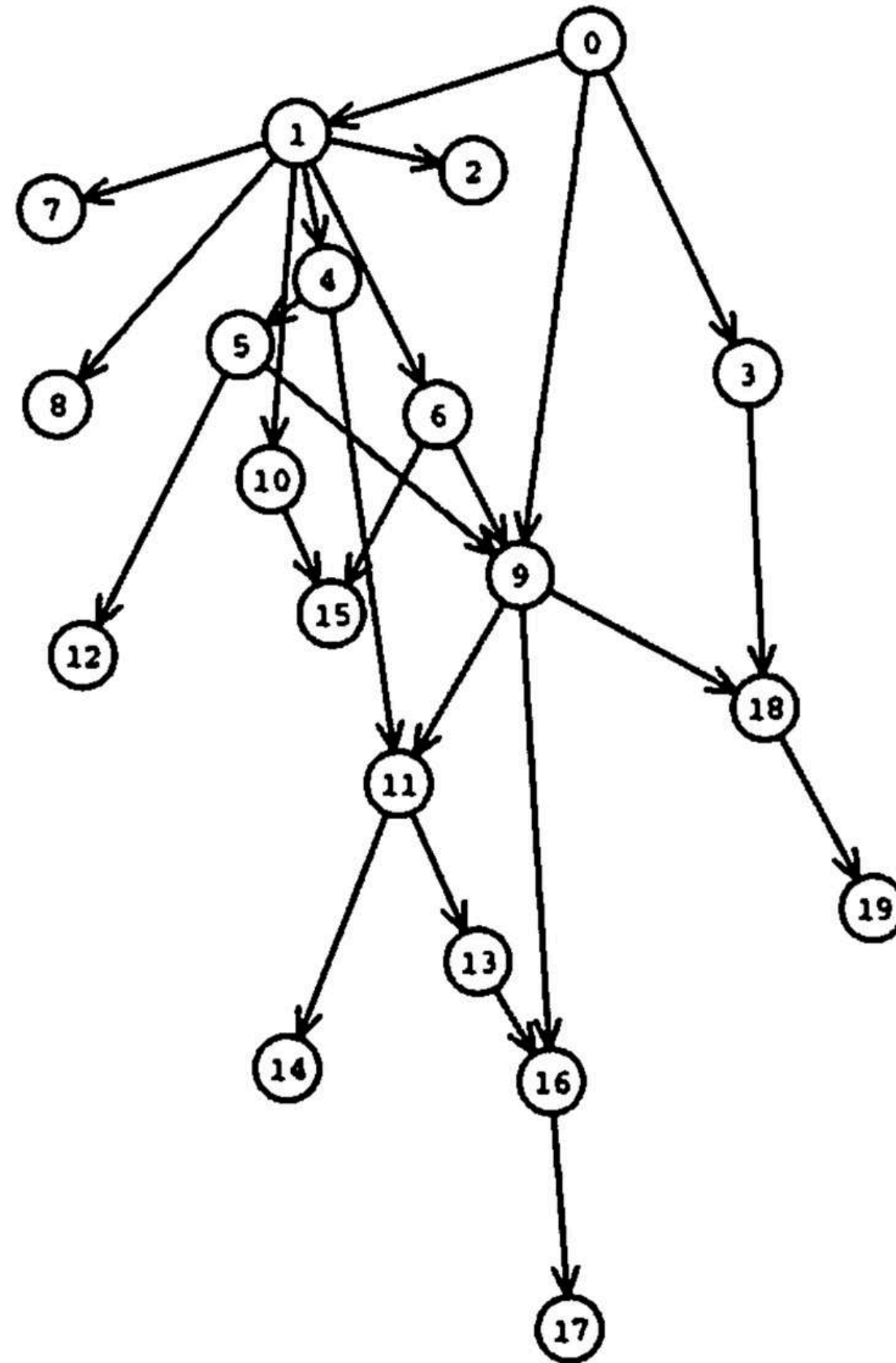


Figure 10.12: Magnetic spring drawing using a vertical magnetic field and unidirectional magnetic springs.

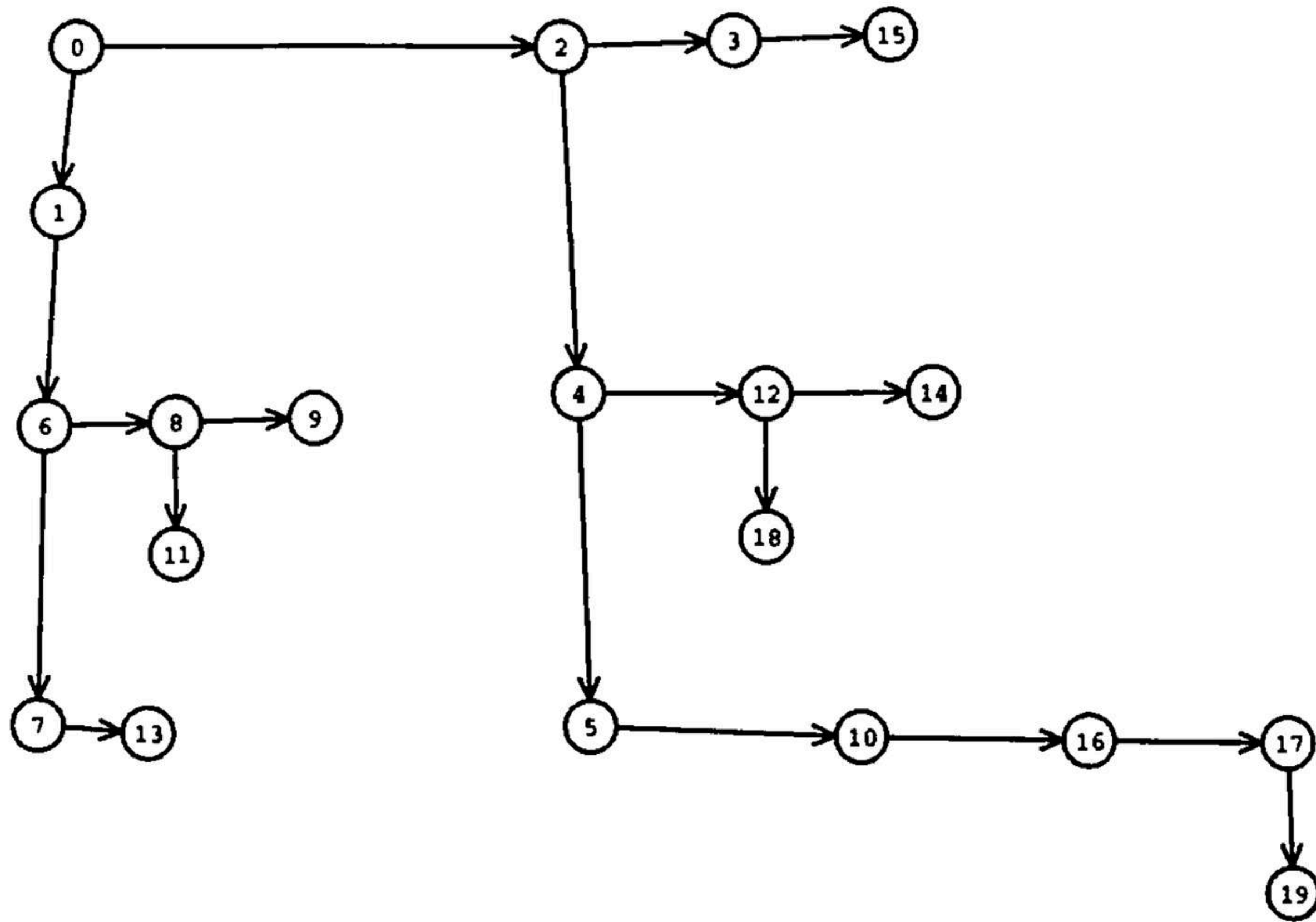


Figure 10.13: Magnetic spring drawing using a combination of horizontal and vertical magnetic fields and unidirectional magnetic springs.

