

1. An example of flights with two cyclic routes.
2. Formal definition of a (simple) graph (non-directed, without loops and parallel edges)
3. Example: among 6 people there are 3 people who know each other or 3 people who don't know each other (acquaintance is mutual)
4. Example: there are even number of people in this room who knows odd number of people
5. Definition of a vertex degree $d(v)$
6. Theorem: $\sum_{v \in V} d(v) = 2|E|$
7. Definition of a walk¹ (path), a (simple) path, a length of a walk
8. Definition of a closed walk (cycle), (simple) cycle
9. Definition of connectivity: vertices u and v are connected iff there exists a path from u to v
10. Definition of a connected graph and (connected)
11. Definition of a subgraph.
12. Definition of a (connected) component: a maximal connected subgraph
13. Theorem: vertices in components form a partition
14. Examples of special graphs: a path P_n , a cycle C_n .

References

The books are listed on the wiki-page.

[1]: Sections 7.1 and 7.2

[4]: Sections 3.1, 3.2.1-3.2.3,

Keywords (that have not been aforementioned)

- Vertex (=node, point)
- An edge $\{u, v\}$ has *endpoints* u and v
- Adjacent vertices (=neighbours)

¹Be careful! There are a lot of different terminologies in the graph theory. We use terminology from [1] and terminology in [4] is different! Terminology from [4] putted hereinafter in brackets.