- undirected graph, vertex or node, edge, adjancet vertices (neighbors), vertex is incident to an edge, edge is incident to a vertex, isolated vertex, pendant vertex
- simple graph G(V, E) with |V| = n, |E| = m
- multigraph, pseudograph, (edge-)weighted graph, node-weighted graph
- subgraph of G, supergraph of G', spanning subgraph of G, induced subgraph G[V'] of G, induced cycle of G, H-free graph
- union of two graphs, joining two graphs, cartesian product (a.k.a., box product) of two graphs, decomposition of a graph
- complement(ary) graph \overline{G} of G, complete graph K_n on n number of vertices, a (k-)clique of size k in G, regular graph, k-factor (k-regular spanning subgraph) of G, k-partite graph, bipartite graph, biclique (K_{n_1,n_2})
- minimum degree $\delta(G)$ of G, maximum degree $\Delta(G)$ of G, degree sequence, open neighborhood N(v) of vertex v of G, closed neighborhood N[v] of vertex v of G, open neighborhood N(V') of G, closed neighborhood N[V'] of G
- popular graphs: triangle, cycle (C_n) , wheel (W_{n-1}) , house, kite, bowtie, hypercube (Q_n) , claw, paw, Petersen
- contraction of a subset of nodes into a supernode, contracting an edge, edge subdivision
- planar graph G, dual graph G^* of planar graph G, dual vertex f^* of G^* corresponding to face f of G, dual edge e^* of G^* corresponding to edge e of G
- u, v-walk; u, v-path; u, v-simple path

• length of a u, v-walk; distance between u and v, eccentricity $\epsilon(u)$ of u, diameter diam(G) of G, diametral pair of nodes, raidus rad(G) of G, a central node of G, the center of G

- a cycle (containing u), a simple cycle (containing u), self-loop, girth of G
- a maximum (simple) path, a maximal (simple) path
- reachability, (connected) component, connected graph, a cut C of G, vertex sets induced by cut C, s-t cut C, cut-set of C, set of edges respected by C, cut-edge (a.k.a., bridge), cut-vertex (a.k.a., articulation point)
- k-connected, vertex-connectivity (κ), 1-connected or connected, biconnected or 2-connected or block,
 k-edge-connected, edge-connectivity (λ)
- matching, maximal matching, maximum matching, perfect matching
- vertex cover, edge cover, independent (a.k.a., stable) set, clique number, chromatic number (χ), dominating set

• tree, rooted tree, ordered rooted tree, forest

- root, internal node, leaf (a.k.a., external node), siblings, ancestor of v, proper ancestor of v, descendant of v, proper descendant of v, subtree T_v rooted at v of tree T
- level of a node, depth of v, height of v
- popular trees: chain, caterpillar, star
- k-ary tree, binary tree, full/strict k-ary tree, balanced tree, almost complete k-ary tree, complete k-ary tree
- spanning tree, spanning forest
- out-arborescence, directed tree

- directed simple graph, orientation of edges, directed edges or arcs, in-degree $deg^-(v)$ of vertex v of G, out-degree $deg^+(v)$ of vertex v of G, underlying undirected graph of a directed graph, simple cycle in a directed graph, directed acyclic graph, transpose (a.k.a., converse) of a directed graph, a tournament (of a complete undirected graph)
- reachability, strongly connected component, strongly connected graph, weakly connected component, weakly connected graph, transitive closure, transitive reduction
