NAMED GRAPHS (and other vocabulary)

**note*: I'll draw these graphs as undirected, although they can be directed as well. In general, unless specifically mentioned, graphs are assumed to be undirected, as they are the most general case.*

DEGREE (undirected graphs only)

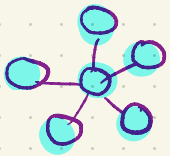
the degree of a node in a graph is equal to the number of edges incident to it. That is, the degree of node *u* is the number of unordered edges containing *u* as an endpoint.

IN/OUT-DEGREE (directed graphs only)

The out-degree of a node *u* in a directed graph is equal to the number of *outgoing* edges from *u*: that is, the number of ordered edges containing *u* as the starting point. The in-degree of node *u* in a directed graph is equal to the number of *incoming* edges to *u*: that is, the number of ordered edges containing *u* as the endpoint.

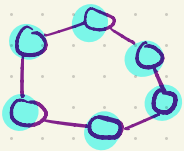
STAR GRAPHS

A star graph with n nodes has a central node that has degree (n-1), whereas all other nodes have degree 1, with one edge to the central node.



CYCLE GRAPHS

A cycle graph (or a circular graph) with n nodes is a graph with only one cycle. It has n edges and each node has degree 2.

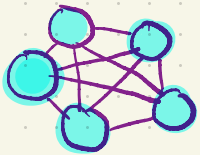


PATH GRAPH

A path graph with n nodes is a graph with no cycles where two end nodes have degree 1 and all other nodes have degree 2. All nodes and edges lay on a straight line.

COMPLETE GRAPH (clique)

A complete graph with n nodes is a graph where each node has an edge to every other node. Each node has degree (n-1).



TREE

A tree is a connected, undirected graph with no cycles.