Graph Terminology

A *graph* G is a pair (V, E) where V is a finite, non-empty set of nodes and E is a set of edges, each of which connects two nodes. An edge e is represented as a pair of nodes (u, v).

A *directed graph* G has directed edges $e = (u, v) \in E$ – i.e. the edge e points from node u to node v.

- **path**:

- **simple path**:

- **cycle**:

- **connected**:

- **strongly connected (directed graph)**:

- **distance**:

- **tree**:

- **parent/child**:

- **descendant/ancestor**:

- **leaf**:

[3.2] Let G be an undirected graph with n nodes. Any two of the following implies the third:

1. G is connected
2. G does not contain a cycle
3. G has n-1 edges