Trees

- **node**: where the data is
- **link**: connects nodes
- **parent**: node above or before a node
- **root**: node that has no parent (there can be only one)
- **child**: node after a node
- **sibling**: node that shares the same parent
- **leaf**: node with no children
- **internal node**: node that has a parent and at least 1 child
- **path**: list of nodes down the tree
- **ancestor**: node that is on the path to a node from the root
- **descendent**: node that can be reached by following a path from a node
- **path length**: number of links in a path
- **level**: all nodes in a level have the same path length from the root
height: length of the longest path
order: maximum number of children
balanced tree: all leaves are within one level of each other
complete tree: balanced and all nodes on highest numbered level are leftmost
full tree: all internal nodes have \( n \) children (where \( n \) is the order)

for trees of order 2

unbalanced  balanced  complete  full