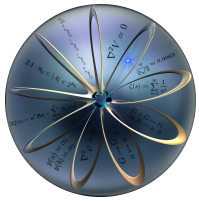

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branch

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Defines	branch
Defines	cofinal branch

A subset B of a tree $(T, <_T)$ is a *branch* if B is a maximal linearly ordered subset of T. That is:

- $<_T$ is a linear ordering of B
- If $t \in T \setminus B$ then $B \cup \{t\}$ is not linearly ordered by $<_T$.

This is the same as the intuitive conception of a branch: it is a set of nodes starting at the root and going all the way to the tip (in infinite sets the conception is more complicated, since there may not be a tip, but the idea is the same). Since branches are maximal there is no way to add an element to a branch and have it remain a branch.

A *cofinal branch* is a branch which intersects every level of the tree.