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noetherian

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A module M is *noetherian* if it satisfies the following equivalent conditions:

- the ascending chain condition holds for submodules of M ;
- every nonempty family of submodules of M has a maximal element;
- every submodule of M is finitely generated.

A ring R is *left noetherian* if it is noetherian as a left module over itself (i.e. if ${}_R R$ is a), and *right noetherian* if it is noetherian as a right module over itself (i.e. if R_R is an), and simply *noetherian* if both conditions hold.