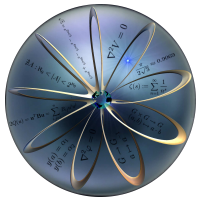

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PID

Canonical name	PID
Date of creation	2013-03-22 11:56:25
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Owner	mps (409)
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Author	mps (409)
Entry type	Definition
Classification	msc 16D25
Classification	msc 13G05
Classification	msc 11N80
Classification	msc 13A15
Synonym	principal ideal domain
Related topic	UFD
Related topic	Irreducible
Related topic	Ideal
Related topic	IntegralDomain
Related topic	EuclideanRing
Related topic	EuclideanValuation
Related topic	ProofThatAnEuclideanDomainIsAPID
Related topic	WhyEuclideanDomains

A *principal ideal domain* is an integral domain where every ideal is a principal ideal.

In a PID, an ideal (p) is maximal if and only if p is irreducible (and prime since `http://planetmath.org/PIDsAreUFDs`any PID is also a UFD).

Note that subrings of PIDs are not necessarily PIDs. (There is an example of this within the entry biquadratic field.)