principal ideal ring

Canonical name	PrincipalIdealRing
Date of creation	2013-03-22 14:33:16
Last modified on	2013-03-22 14:33:16
Owner	Wkbj79 (1863)
Last modified by	Wkbj79 (1863)
Numerical id	7
Author	Wkbj79 (1863)
Entry type	Definition
Classification	msc 13F10
Classification	msc 13A15
Synonym	principal ring
Related topic	CriterionForCyclicRingsToBePrincipalIdealRings

A commutative ring R in which all ideals are `http://planetmath.org/PrincipalIdeal`principal http://planetmath.org/I`ei.e. `http://planetmath.org/IdealGeneratedBy`generated by a single ring element, is called a *principal ideal ring*. If R is also an integral domain, it is a principal ideal domain.

Some well-known principal ideal rings are the ring $\mathbb{Z}$ of integers, its factor rings $\mathbb{Z}/n\mathbb{Z}$, and any polynomial ring over a field.