product of ideals

Canonical name	ProductOfIdeals
Date of creation	2013-03-22 11:50:59
Last modified on	2013-03-22 11:50:59
Owner	mathcam (2727)
Last modified by	mathcam (2727)
Numerical id	11
Author	mathcam (2727)
Entry type	Definition
Classification	msc 16D25
Classification	msc 15A15
Classification	msc 46L87
Classification	msc 55U40
Classification	msc 55U35
Classification	msc 81R10
Classification	msc 46L05
Classification	msc 22A22
Classification	msc 81R50
Classification	msc 18B40
Related topic	SumOfIdeals
Related topic	QuotientOfIdeals
Related topic	PruferRing
Related topic	ProductOfLeftAndRightIdeal
Related topic	WellDefinednessOfProductOfFinitelyGeneratedIdeals

Let R be a ring, and let A and B be left (right) ideals of R. Then the *product* of the ideals A and B, which we denote AB, is the left (right) ideal generated by all products ab with $a \in A$ and $b \in B$. Note that since sums of products of the form ab with $a \in A$ and $b \in B$ are contained simultaneously in both A and B, we have $AB \subset A \cap B$.