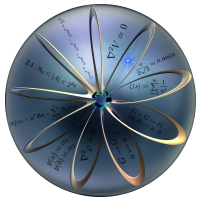

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complete ring of quotients of reduced commutative rings

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Defines	rational extension

There is a characterization of complete ring of quotients of reduced commutative rings. Let A be a `http://planetmath.org/ReducedRing`reduced commutative ring, then if B is an overring of A and if for any element $b \in B\backslash\{0\}$ there is an $a \in A$ such that $ab \in A\backslash\{0\}$, then B is said to be a *rational extension* of A. See how similar this is with the definition of essential extension in the category of rings, obviously all rational extensions of reduced commutative rings are also essential extensions. Furthermore there is a maximum (upto A-isomorphism) rational extension of A and this is in fact the complete ring of quotients of A.