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epimorphic hull

Canonical name	EpimorphicHull
Date of creation	2013-03-22 18:28:33
Last modified on	2013-03-22 18:28:33
Owner	jocaps (12118)
Last modified by	jocaps (12118)
Numerical id	5
Author	jocaps (12118)
Entry type	Definition
Classification	msc 18A20
Related topic	epimorphicextension
Related topic	essentialextension
Related topic	completeringofquotients
Defines	epimorphic hull

Let $\mathcal{C}$ be a category and A be an object in this category. The *epimorphic hull* of A is an object $E \in \mathrm{Ob}(C)$ such that there is an $f : A \to E$ that has the following property :

1. f is an epimorphic extension

2. f is an essential extension

3. f is (roughly put "maximal epimorphic and essential extension") has the property that for any epimorphic and essential extension $g : A \to B$, there exists a morphism $g : B \to E$ such that

$$f = g \circ h$$

Remark 1 *We used "the epimorphic hull", because it can be proven that if an epimorphic hull exists for an object of the category, it is unique upto isomorphism.*

In the category of semiprime commutative ring the epimorphic hull for every semiprime ring exist. The epimorphic hull of a reduced ring is the intersection of all the von Neumann regular rings that lie between the ring and its complete ring of quotient.