Antolin@GSS: What is algebra, really?

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1:06 PM

Nice things: 1. 0-nary ops are "nullary"

2. A "meadow" is like a field except the axiom about multiplicative inverses is replaced with $\forall x \; \exists x^{-1} \; x x^{-1} x = x$.

not just $x \neq 0$

<u>Def</u> A monad is a functor

$$T : \mathrm{Set} \longrightarrow \mathrm{Set}$$

(mapping X to the "free gadget on X")

$$T(TX) \xrightarrow{\mu_X} TX$$

μ is a "natural trans".

(precisely, μ is a natural trans. $T^2 \rightarrow T$)

(+ more, + conditions)

Bad:

* There is no monad for fields.

* Monads do describe compact Hausdorff spaces; T is "Stone-Čech".

Lawvere theories