

Re: Interesting (IMO) question about the reals...

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- *From:* "MoeBlee" <jazzmobe@xxxxxxxxxxx>
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(Technicality: This assumes that we're talking about the theory of complete ordered fields as a first-order theory using set theory, so the Completeness Theorem from logic applies...)

This is something I don't understand. What is the theory of complete ordered fields? All I know of, as you mentioned, is set theory. If we take some proper subtheory of set theory to be the theory of complete ordered fields, then it's not a recursively axiomatizable theory, right? Meanwhile, just putting it as a first order theory onto itself (without a primitive and axioms for the membership relation) by using an axiom schema for the least upper bound principle doesn't, as I've been told, result in a theory whose models are all and only complete ordered fields.

Anything you might say to shed some light here is appreciated.

MoeBlee

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