

Re: Question: SPACE of super-complex numbers

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David Bandel wrote:

> hi.
>
> complex numbers are elegant. the complex plane is simple to grasp. I
> am wondering if there is some extension that would go to the 3rd
> dimension. what kind of hyper-imaginary axis.. and what the unit of
> it would be and represent. (as the unit of the imaginaries represents
> the square root of -1) what would the unit of this 3rd axis' numbers
> be? is there such a thing?

There are no 3 D division algebras over the reals. You have to go from complex number to quaternions.

All of these manipulations were tried back in the middle of the 19-th century. Google on the history of quaternions and octernians. Also Google division algebras. Having a quotient is a strong constraint.

On the other hand you can have rings (multiplication and addition defined) of any degree over the reals.

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