

Re: Polysign numbers Was: Give wedge products the wedgie they deserve

# Re: Polysign numbers Was: Give wedge products the wedgie they deserve

---

*Source:* <http://sci.tech-archive.net/Archive/sci.math/2008-08/msg01172.html>

---

- *From:* amy666 <[tommy1729@xxxxxxxxxxxx](mailto:tommy1729@xxxxxxxxxxxx)>
  - *Date:* Sun, 10 Aug 2008 18:21:52 EDT
- 

Edward Green wrote :

On Aug 7, 9:38 am, "Timothy Golden  
BandTechnology.com"  
<[tttppp...@xxxxxxxxxx](mailto:tttppp...@xxxxxxxxxx)> wrote:

<http://bandtechnology.com/PolySigned>

Hmm... Ok. Some interesting history:

[http://en.wikipedia.org/wiki/Negative\\_and\\_non-negative\\_numbers](http://en.wikipedia.org/wiki/Negative_and_non-negative_numbers)

"In Hellenistic Egypt, Diophantus in the third century A.D. referred to an equation that was equivalent to  $4x + 20 = 0$  (which has a negative solution) in Arithmetica, saying that the equation was absurd."

"In the 15th century, Nicolas Chuquet, a Frenchman, used negative numbers as exponents and referred to them as 'absurd numbers'. "

[http://en.wikipedia.org/wiki/Imaginary\\_number](http://en.wikipedia.org/wiki/Imaginary_number)

"Imaginary numbers were defined in 1572 by Rafael Bombelli. At the time, such numbers were thought not to exist, much as zero and the negative numbers were regarded by some as fictitious or useless.

Re: Polysign numbers Was: Give wedge products the wedgie they deserve

<http://en.wikipedia.org/wiki/Quaternion>

"In mathematics, quaternions are a non-commutative extension of complex numbers. They were first described by the Irish mathematician Sir William Rowan Hamilton".

[http://en.wikipedia.org/wiki/Surreal\\_numbers](http://en.wikipedia.org/wiki/Surreal_numbers)

"In mathematics, surreal numbers are the elements of a field[1] containing the real numbers as well as infinite and infinitesimal numbers, respectively larger or smaller in absolute value than any positive real number, and therefore the surreals are algebraically similar to superreal numbers and hyperreal numbers".

So, once upon a time, we only had positive numbers, and then we had negative numbers, and then... well, the rest is history (and undoubtedly incomplete history in this post). Now, you are proposing to add to the list with "polysign" numbers, by extending the list of signs beyond "+" and "-". Bravo! It is the genius — or the pathology — of mathematics to look at a given structure and ask what would happen if we relaxed this, or added that.

Your disdain for the work of Grassmann and Clifford, which takes something of the same flavor as the early skepticism for negative, and later imaginary numbers (by the time we got the quaternions, I guess people were inured to the fancy of mathematicians) is possibly ironic, since you want to introduce yet another flavor of number system, or algebraic system, to the menu. :-)

for any questions about the polysigned , you may ask me.

i have had much contact with timothy golden and supported his polysigned and other projects of him / us.

Re: Polysign numbers Was: Give wedge products the wedgie they deserve

( on his website you will find other thoughts apart from polysigned , which are the result of our talks on sci.math and our e-mail traffic )

note however that in a way his idea is not totally new ; although no negative exists , one could see n-signed as vectors in n-space starting at the origin ...

perhaps also interesting to you is the ' object convolution ' or ' minkowski products ' on his site , which is a consequence of me talking to him.

( i claim credit , but on the other hand minkowski was actually the first of course )

we are still looking for closed form solutions for minkowski products in P3 and P4 !!

nice to see someone interesting in polysigned again here on sci.math.

regards

tommy1729

.