Subject: Re: Commutativity of multiplication
Posted by Foldy Lajos on Thu, 26 Oct 2006 08:26:12 GMT
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On Wed, 25 Oct 2006, JD Smith wrote:

> Commutation hasn't been broken, only "type commutation", which doesn't
> really exist. For all purposes, given the limitations of integer
> representation in computers, -500 and 4294966796 *are* the same. I
> could just as easily claim that "adding and subtracting 1 is broken":
>
> IDL> print, 4294967295UL + 1UL
> 0
>
> IDL> print,0b - 1b
> 255
>
> JD
>

If multiplication is commutative, then a*b should be equal to b*a.

```
IDL> a=-1l
IDL> b= 1ul
IDL> print, a*b eq b*a
1
```

Fine. If a*b is equal to b*a, then 1.0*(a*b) should be equal to 1.0*(b*a),
too.

```
IDL> print, 1.0*(a*b) eq 1.0*(b*a)
0
```

I tend to say that IDL's multiplication is not commutative in
the mathematical sense.

Other languages, like C are "more commutative":

```
  signed int a=-1;
unsigned int b= 1;

printf("%d %d\n", a*b==b*a, 1.0*(a*b)==1.0*(b*a));
```

prints 1 1 (the result is signed int both for a*b and b*a).

regards,
lajos