

Re: ArcTanh[x,y] & Wikipedia.

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- *From:* "Richard J. Fateman" <fateman@xxxxxxxxxxxxxxxxxxxxx>
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Macsyma / Maxima uses `asin` and `asinh` (etc.)

I would not expect the openmath standard to be held up as an example to be followed; rather the openmath people seem to try to follow someone else's standard. e.g. what does "cos" mean? Well, what it usually means.

I also would not want Mathematica to become a standard setter because it sometimes differs from the previous convention for no reason I can see. For example, I think reversing the arguments of `arctan2` from convention. [not the `arctanh2` of the subject line]

RJF

David N. Williams wrote:

Simo K Kivelä wrote:

"Roger Beresford" <mail@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx> writes:

When I added the definition
`ArcTanh[x,y] := Log[(x+y)/SQRT[x^2-y^2]]`

Re: ArcTanh[x,y] & Wikipedia.

(due

By the way, the names of the inverse hyperbolic functions should be arsinh, arcosh, artanh etc. and not arc*. The latin names of the functions are 'area sinus hyperbolicus' etc. where 'area' refers to the area of a sector bounded by the unit hyperbola. In the trigonometric case, 'arc' is correct because the value of the function represents the length of an arc. (It could also be considered as area of a sector and therefore, 'ar' would in principle be correct also here, but it has never been used.) In the hyperbolic case, there is no arc, and the use of 'arc' should be considered as a mistake.

A mistake in that sense, but "arc" has very wide usage. And it's standardized in the open math standard, e.g.,

<http://www.openmath.org/cocoon/openmath/cd/transc3.html#arctanh>

I believe their case for standardizing such things, including the definitions of principal branches, is compelling.

-- David