Subject: Re: Old Question
Posted by Jacques Basson on Wed, 15 Dec 1999 08:00:00 GMT
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Ben Tupper wrote:
>
> Jacques Basson wrote:
>
>> Hi all
>>
>> Sorry, this has got to be an old question, but I can't seem to locate
>> the answer. What is the way around the following problem?
>>
>> IDL> a = -1
>> IDL> print, -1^(1./3)
>> -1.00000
>> IDL> print, a^(1./3)
>> NaN
>> % Program caused arithmetic error: Floating illegal operand
>>
>> Thanks
>> Jacques
>
> Hello,
>
> I now know why it happens. In the documentation I see...
>
> Exponentiation
>
> The caret (^) is the exponentiation operator. A^B is equal to A raised to
> the B power.
>
> ï¿½ If A is a real number and B is of integer type, repeated multiplication
> is applied.
> ï¿½ If A is real and B is real (non-integer), the formula A^B = e^(B ln A)
> is evaluated.
> ï¿½ If A is complex and B is real, the formula A^B = (re^(iq))^B = r^B *
> (cosBq + isinBq) (where r is the real part of A and iq is the imaginary
> part) is evaluated.
>
> ï¿½ If B is complex, the formula A^B = e^(B ln A) is evaluated. If A is
> also complex, the natural logarithm is computed to be ln(A) = ln(re^(iq))
> = ln(r) + iq (where r is the real part of A and iq is the imaginary
> part).
> ï¿½ A^0 is defined as 1.
>
> Your example falls into the second type of operation. I don't know how
> to get around that but would like to know also.

>
> Ben
>
> --
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I resorted to creating a simple function which basically does
 abs(a)^(1./3) * (2*(a gt 0) - 1)
Slightly messy, but it works.

Jacques
