
Subject: Re: Euler formula with complex numbers
Posted by on Fri, 22 Feb 2002 18:06:09 GMT
[View Forum Message](#) <> [Reply to Message](#)

Look into the "IDL Online Help" in "What's New in IDL 5.5". Search for ATAN and look for the changes.

ATAN(z) doesn't return the phase anymore. It returns a complex.
Use ATAN(IMAGINARY(z), REAL_PART(z)) instead. I know it's awful, but...

Cheers.

"frederic" <raison@srl.caltech.edu> escreveu na mensagem
news:9f6b22a3.0202220953.2ceb4f73@posting.google.com...
I start from:

```
z=complex(3,2)
mag=abs(z)
phi=atan(z)
```

and I want to come back to z with mag and phi in this way:

```
z_prime=mag*exp(complex(0,1)*phi)
```

and I get z_prime=(0.715179, 3.02955) which is different from z.

What is wrong in the way I use IDL?

Thank you

Subject: Re: Euler formula with complex numbers
Posted by [Robert Stockwell](#) on Fri, 22 Feb 2002 21:39:57 GMT
[View Forum Message](#) <> [Reply to Message](#)

Try this:

```
z=complex(3,2)
mag=abs(z)
phi=atan(imaginary(z),double(z))
z_prime=mag*exp(complex(0,1)*phi)
```

```
print,'mag ',mag
print,'phi ',phi
print,'z ',z
print,'z_prime ',z_prime
```

RESULTS:

```
IDL> .GO
mag      3.60555
phi      0.58800260
z (      3.00000,      2.00000)
z_prime (      3.0000000,      2.0000000)
```

Cheers,
bob

Jiç½lio Maranhão wrote:

```
> Look into the "IDL Online Help" in "What's New in IDL 5.5". Search for ATAN
> and look for the changes.
>
> ATAN(z) doesn't return the phase anymore. It returns a complex.
> Use ATAN(IMAGINARY(z), REAL_PART(z)) instead. I know it's awful, but...
>
> Cheers.
>
> Jiç½lio Maranhão
>
> "frederic" <raison@srl.caltech.edu> escreveu na mensagem
> news:9f6b22a3.0202220953.2ceb4f73@posting.google.com...
> I start from:
>
> z=complex(3,2)
> mag=abs(z)
> phi=atan(z)
>
> and I want to come back to z with mag and phi in this way:
>
> z_prime=mag*exp(complex(0,1)*phi)
>
>
> and I get z_prime=( 0.715179, 3.02955) which is different from z.
>
```

>
> What is wrong in the way I use IDL?
>
> Thank you
>
>
>
