## Subject: Re: WRONG RESULTS WITH IDL Posted by Thomas A. McGlynn on Tue, 05 May 1998 07:00:00 GMT

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Frank Loewenthal wrote:
> Hi Folks
> For calculation of beam-propagation I use IDL. But now I realize that
> for large arguments, even with double-precision, IDL gives wrong
> results:
> For example:
>
  \sin(12345678901.12345678901) = -03727900499608007
> where IDL get:
>
> IDL> x = double(12345678901.12345678901)
> IDL> print, sin(x)
     0.098761418
>
>
> Can somebody confirm this result, and does anybody know the solution
 to overcome this problem?
> Best regards
>
> Frank
You're misunderstanding how to create a double precision literal in
IDL. E.g.:
 IDL> x=12345678901.12345678901
 IDL > print, sin(x)
    0.0987614
 IDL> x=12345678901.12345678901d0
 IDL > print, sin(x)
    -0.37327885
```

In the first case the literal value is interpreted in single precision and then assigned to x. To preserve the precision you need to indicate that it's a double precision value.

Regards, Tom McGlynn tam@silk.gsfc.nasa.gov