Subject: fractional powers of negative numbers?
Posted by Med Bennett on Thu, 24 Apr 1997 07:00:00 GMT
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Can someone explain this to me? Is it possible to compute the fractional power of a negative number? IDL does it on single negative values but not on arrays containing negative values.

```
IDL> print,findgen(11)-5
    -5.00000     -4.00000     -3.00000     -2.00000
    -1.00000     0.000000      1.00000      2.00000
     3.00000      4.00000      5.00000
IDL> print,(findgen(11)-5)^1.51
    -1.#IND0     -1.#IND0     -1.#IND0     -1.#IND0
    -1.#IND0     0.000000      1.00000      2.84810
     5.25355      8.11168      11.3617
% Program caused arithmetic error: Floating illegal operand
IDL> print,-2.^1.51
    -2.84810
IDL> print,-5.^1.51
    -11.3617
```

Med Bennett
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Subject: Re: fractional powers of negative numbers?
Posted by Ewan A. Macpherson on Thu, 24 Apr 1997 07:00:00 GMT
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Med Bennett wrote:

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```
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>      -2.84810
> IDL> print,-5.^1.51
>      -11.3617
```

These may not give an error, but they're wrong. The results are going to be complex. IDL is giving you -(2^1.51), not (-2)^1.51, which gives me an error in PV-WAVE. When you do it on the array it is not treating the negative sign as a negation operator, but as part of the value, hence the error. You'll need to do something like this:

```
print, exp(1.51 * alog(complex(-2,0)))
```

which gives: (0.0894611,   -2.84669)

--
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