Subject: Re: Wow. exp() difficulties...
Posted by davidf on Thu, 24 Jul 1997 07:00:00 GMT
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lady of the elves writes:

> I've encountered a really interesting--though annoying--problem. I'm
> trying to use exp(a), where a>88 or so. My calculator can do it...the
> program can't. It gives me a "floating underflow" error.
>
> Can anyone give me more information on how to work this out? I haven't
> yet figured out long numbers...nor how they differ from floating point.
> I don't know if these uncertainties relate, but all of my numbers are
> floating point.
>
> Is it just that the language can't handle the numbers? e^89=4.4*10^38;
> it's rather large--but is it just that it can't handle the size? Or the
> precision? Is it that I need to know more about long numbers?

I am no expert in this area, but I think the problem here is with
precision. e^89 is just simply too large to be represented adequately
as a floating point number (4 bytes). You need more bits. The problem
can be eliminated by casting your floating values to doubles. For
example,
this works:

```
  a = 89.0
  Print, EXP(Double(a))
    4.4896128e+038
```

> What *is* a floating underflow?

In this case, it is a number that is so large it begins
to appear small. It's, er, a mystical thing. :-)

Cheers,

David

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