Subject: rounding errors
Posted by Dominic R. Scales on Fri, 27 Apr 2001 08:51:24 GMT
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HELP!

What gives? Is there any numerical math guy/gal out there
who can tell me how this happens? It seems to me, that
the accuracy of the second/third cast ist WAY off.

```
a=double('2.56989')
b=double( 2.56989 )
c=double(float('2.56989'))

print,a,b,c,format='(d)'

    2.5698900000000000 <---- this is what i want to have
    2.5698900222778320
    2.5698900222778320
```

So, the question is: why can the cast from a string give a much
more accurate result than a cast from a literal constant (or a
float variable, for that matter)? Do I really have to cast with:

```
d=double(2.56989*1000000L)/1000000.
print,d,format='(d)'

    2.5698900000000000
```

or even

```
d=double(string(2.56989))
print,d,format='(d)'

    2.5698900000000000
```

Ah yes, and while I'm at it... Have you ever compared
5.2e-6, 5.2*1e-6, 5.2*10*1e-7 ?

```
print, 5.2e-6, 5.2*1e-6, 5.2*10*1e-7, format='(e20.10)'
  5.2000000323e-06
  5.1999995776e-06
  5.2000000323e-06
```

Cheers,
Dominic

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