Subject: Inaccuracies
Posted by Andy Loughe on Mon, 13 Nov 1995 08:00:00 GMT
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Ok, I am sure this has been discussed before, but let
me start this thread again. I wish to create a 15-element
vector which contains the numbers -1.4 to 1.4 by an increment
of 0.2 I also wish the sum of these elements to be zero
(No, this isn't the new math). Here is what I tried...

TRIAL #1
========
```
IDL>  a = findgen(15)*.2 - 1.4
IDL>  print, total(a)
  7.15256e-07
```

Hmmm! Not so good.

TRIAL #2
========
```
IDL> a = dindgen(15)*(.2D)-1.4D
IDL> print, total(a, /double)
  4.4408921e-15
```

Ok, this is better but not correct.
And what are the values of a?

```
IDL> print, a
     -1.4000000      -1.2000000      -1.0000000     -0.80000000
     -0.60000000     -0.40000000     -0.20000000     2.2204460e-16
      0.20000000      0.40000000      0.60000000     0.80000000
      1.0000000       1.2000000       1.4000000
```

I seem to have lost a zero somewhere, and for me this matters!!!

TRIAL #3
========
What if I only needed 13 numbers between -1.2 and 1.2.
```
IDL>  a = findgen(13)*.2 - 1.2
IDL>  print, total(a)
      0.00000
```

Now how can I get this to work for 15 numbers?

Maybe I am missing something here, but this kind of behavior makes IDL a bit problematical for scientific use. With only 15 numbers and double precision arithmetic, I can't believe this would fail in FORTRAN or C!

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