
Subject: Re: Simple MODULO question.
Posted by [peter](#) on Wed, 03 Jul 1996 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

S. Penzes (penzes@dres.dnd.ca) wrote:
: It truly is a simple question and the online help doesn't seem to
: answer it. So it's either a bug or I have a short circuit in a synapse
: someplace. Anyway here it is:

: Why does `print,1.0 mod 0.25` return 0.00000 (as expected)
: generally `1.0 mod (1.0/2^n)` returns 0
: while `print,1.0 mod 0.2`
: or `print,1.0 mod (1.0/5.0)` return 0.200000
: generally `1.0 mod (1.0 / n)`

Probably because, in floating point, 0.25 is represented exactly, so that $1.0/0.25 = 0.0$, while 0.2 is not represented exactly. I'll guess that 0.2 is actually something like 0.200000001, so that $5*0.2$ is greater than 1.0, while $1.0-4*0.2$ is 0.199999996, which prints at 0.2.

Relying on true equality of floating point numbers as a test (which this is doing, relying on $5.0*0.2=1.0$) is, well, unreliable.

Peter

Peter Webb, HP Labs Medical Dept
E-Mail: peter_webb@hpl.hp.com
Phone: (415) 813-3756
