Re: Simple maths question

Source: http://coding.derkeiler.com/Archive/Tcl/comp.lang.tcl/2007−05/msg00360.html

- *From*: "slebetman@xxxxxxxxx" <slebetman@xxxxxxxxx>
- *Date*: 10 May 2007 18:27:47 −0700

On May 11, 5:27 am, Mark Janssen <mpc.jans...@xxxxxxxxx> wrote:

> On 10 mei, 22:32, Frem <freminl...@xxxxxxxxx> wrote:
>
> > Hello,
> >
> > I was demonstrating how easy Tcl is to use (or at least to learn to use)
> > when I was immediately flummoxed.
> >
> > On a Windows XP machine I created a trivial proc:
> >
> > (bin) 289 % proc subtract {a b} {
> > return [expr {$a − $b}]
> >
> > }
> >
> > (bin) 290 % subtract 3 2.2
> > 0.7999999999999998
> >
> > Eh? This was using Tcl 8.5a4. It works properly in 8.4.11. Is this a
> > known bug (sorry if it is)?

> Thanks,
> Frem.

> It is working properly in 8.5 as well. The difference between 8.4 and
> 8.5 is that the tcl_precision global is set differently by default.
> In 8.5 the two lines:
>
> set tcl_precision 12
> subtract 3 2.2
>
> will give the same result as in 8.4.
>
> The real reason you get this result however is that floating point
> math is not precise on a computer (0.2 is a repeating binary
> fraction).

People should be reminded with floating point, any fraction that doesn't end in a '5' is imprecise. Just like with regular pen−on−paper decimal math, 1/3 is imprecise (interestingly if you do your math in base 3, 1/3 is not a repeating fraction and can be precisely represented).

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