

This calculation is just wrong / computer can't count!

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I have been debugging something for ages now. I have a method that does some complex maths, but right at the beginning it works out a proportion and a few ratios and the maths is simply wrong. In my code I (obviously) use variables and the values vary each time the method is called, but there seems to be a problem with the maths. I have narrowed the problem down to the following. Can someone else please try this simple calculation and see what their computer gets.

Code Line 1:

```
double effortChangeProportion = (55.0 - 30.0) / 30.0;
```

This first line does 55-30 and divides the result by 30. In other words 25/30, which is 0.8333 (recurring 3s).

The computer manages to give the answer 0.8333333333333337 !!

Code Line 2:

```
effortChangeProportion++;
```

or

```
effortChangeProportion = effortChangeProportion + 1.0;
```

The second line of code (both alternatives give the same result) builds on the first by simply adding 1 (so I can then multiply other numbers by this proportion).

In this case 0.8333 becomes 1.8333, but again the computer gets this wrong. It tries to add 1 to 0.8333333333333337 and gets 1.8333333333333335.

Obviously this can easily be done in 1 line of code, but it is broken down to demonstrate the maths going wrong twice!

Can anyone shed some light on this for me please?

GT

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