Floating Point doesn't Solve Everything!

Example: x = 10.0 (0x41200000)

\+ y = 0.000000238 (0x347F8CF1)

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z = 10.000000238 WRONG!

You cannot represent 10.000000238 with single-precision floating point

0x412000000 = 10.000000000

10.000000238 – can't represent!

0x412000001 = 10.000000950

So z gets rounded down to 10.000000000.