$1 + 1 = 2$

$1.0 + 1.0 = 2.0$

$1.0 + 1 =$??? .... it's 2

$1.0 + 1.00 = 2.0$

..... but is $2 = 2.0$?

$$1.00000\ldots + 1.0 = 2.0$$

is

$$1.0000 + 1.0 = 1.0 + 1.0 \text{ ?}$$

it depends, doesnt it?

$$1 + 1 + \frac{0}{10} + \frac{0}{100} + \frac{0}{1000} + \frac{0}{10{,}000} = 1 + 1 \leftarrow \text{yes}$$

$$(1.0 \pm 0.1) + (1) \neq (1.00 \pm 0.01) + (1)$$

$$\pi \times 10^0 = \pi = 3.1415926 \ldots\ldots$$

$$\pi \times 10^1 = 31.415926 \ldots\ldots$$

$$\pi \times 10^5 = 314{,}159.26 \ldots\ldots$$

but $N_A = 6.02 \times 10^{23} =$

$$6{,}022{,}140{,}760{,}000{,}000{,}000{,}000{,}000$$

which is an integer, but really

$\cancel{N_A = 6.02 \times 10^{23}}$ ~~exactly~~ $\quad N_A = (6.02214078 \pm 0.18 \times 10^{-6}) \times 10^{23}$

~~$\cancel{N_A = 6.02 \times 10^{23}}$ exact integer~~ ← it's not really

$$N_A \approx (6.02214078 \pm 0.00000018) \times 10^{23}$$

What about things like

1.0 liter $+ 2.0$ liter $= 3.0$ liter?

just pretend liters are atoms and remember that nukes are a thing, so like yeah...

"(order of magnitude)" = 42
(in this case)

5.67×10^{42}

$\underbrace{\pm 2.43 \times 10^{40}}_{\text{uncertainty}}$

"signifigant figures"
(3 in this case)