

Correct to 3 Decimal Places ?????

The Phrase

**“The number A approximates sum s correct
to k decimal places”**

means

“The Error in the approximation,

$$\text{Error} = |s - A| \leq 0.00\dots05 \text{”}$$

where there are k zeros between '.' and '5'.

Thus, “ A approximates sum s correct to 3 places”

means “Error ≤ 0.0005 ”.

Thus, “ A approximates sum s correct to 6 places”

means “Error ≤ 0.0000005 ”.

This really says, for k decimal places ,

$$\text{“ Error } \leq 0.5 \times 10^{-k} \text{” ,}$$

and this has k zeros before the 5 since

$$0.5 \times 10^{-k} = 5.0 \times 10^{-(k+1)} .$$