Numerical calculation Tools
3°

1) BIDMAS

When performing a calculation, the following order has to be followed for the different types of operations:
Brackets **I**ndices **D**ivisions and **M**ultiplications **A**dditions and **S**ubtractions
(indices stands for powers)

Example: $\left(\frac{1}{2}+\frac{3}{4}\right)^2-5+\left(1-\frac{3}{2}\right)\times 4=$

2) FRACTIONS

Adding and subtracting $\frac{a}{d}+\frac{b}{d}=\frac{a+b}{d}$ *and* $\frac{a}{d}-\frac{b}{d}=\frac{a-b}{d}$

(we thus have to have a common denominator to add or subtract fractions)

Examples:

Multiplying fractions $\frac{a}{b}\times\frac{c}{d}=\frac{a\times c}{b\times d}$.

Examples:

Dividing fractions $\frac{a}{b}=a\times\frac{1}{b}$; $\frac{a}{b}\div\frac{c}{d}=\frac{a}{b}\times\frac{d}{c}$; $\frac{\frac{a}{b}}{\frac{c}{d}}=\frac{a}{b}\times\frac{d}{c}$

Examples:

3) POWERS

$a^n=\underbrace{a\times a\times a\times .....a}_{n\ times}$ $\qquad a^0=1$

$a^{-n}=\left(\frac{1}{a}\right)^n$ $\qquad a^n\times b^p=a^{n+p}$ $\qquad (a\times b)^n=a^n\times b^n$ $\qquad \left(\frac{a}{b}\right)^n=\frac{a^n}{b^n}$ $\qquad \left(a^p\right)^n=a^{p\times n}$

Examples:

4) STANDARD FORM

Property: *Every decimal number (except zero) can be written in the form* $a\times 10^n$ *(with a number such that* $-10<a\leq -1$ *or* $1\leq a<10$*, and n a positive or negative whole number)*

Examples: $234,5=$ $\qquad -0,00562=$