

# General vocabulary

## Verbes d'action

to count  
to solve  
to compute  
to work out  
to determine  
to look for  
to search for  
to raise to the square

to assume  
to deduct from  
to conclude  
to prove  
to show  
to assert  
to recap  
to rank

to estimate  
to evaluate  
to be equal to  
to equal  
to forecast  
to foresee  
to figure

grouping  
to transpose  
to extract  
to simplify  
to factorize  
to expand= to develop  
to substitute  
to replace  
to eliminate  
to transform, to change into  
to change the subject  
to rearrange the formula  
to vanish  
to cancel  
to satisfy

to increase by  
to increase to  
to decrease by  
to decrease to  
to remain constant  
to rise  
to raise  
to vary (by)  
The level rises to a peak  
To pick up  
To reach a peak  
To plummet

To level off  
To top  
To fall off  
To recover

## Noms

Calculation  
Reasoning  
proof  
Deduction

theorem  
Axiom  
Hypothesis  
algorithm  
instruction  
definition  
property  
proposition  
relation  
condition  
comparison

opposite  
reciprocal  
converse  
contrapositive  
counterexample  
a premise, conjecture  
paradox

unit  
unity  
array  
matrix  
row  
column  
line

symbol  
variable  
random number  
random variable  
calculator  
computer

## Adjectifs

included  
excluded  
finite  
infinite  
implicit  
explicit  
symmetric (en soi)  
symmetrical (par rapport à)  
unique

## Vocabulaire des dimensions

measurement  
measures  
dimensions  
quantity

the length	long
the width	wide
the height	high
perimeter	
the area	
the volume	

## Unités

SI: standard unit  
percentage  
Metre length  
Kilogramme mass  
Second time  
Radian angle  
Square metre area  
Hectare 10000 m<sup>2</sup>  
Cubic metre volume  
litre  
Metre per second speed  
Metre per second per second: acceleration  
Newton force  
Joule energy

## Expressions

If and only if (iff)  
As x tends to + infinity  
For every x belonging to  
According to this table  
Clockwise  
Anticlockwise

The method of contradiction  
By contradiction

To simplify a fraction= to divide numerator and denominator by a common factor= to reduce a fraction to its lowest terms

To change the subject  
To complete the square

Given that  $a=2$  then  $3a=6$   
To plot a graph

And so on  
Shall I do.... ?

# Mathematical vocabulary

Calculus  
Logic

## Algebra

-: minus sign  
Algebraic operations  
Algebraic expressions  
terms  
Literal expression  
Addition / to add / the sum  
Subtraction / to subtract / the difference  
Multiplication / to multiply / the product  
Division / to divide / the quotient

Formula  
Parameter

Difference of two squares  
Remarkable equalities

Equation  
unknown  
Inequation  
Inequality  
Simultaneous equations

## Ensembles

Set  
 $A \cap B$  A intersection B  
 $A \cup B$  A union B  
 $A \subset B$  A is contained in B  
the empty set

## Arithmetique

arithmetic  
Odd  
Even  
Prime  
Dividend  
Divisor  
Remainder  
Common multiple  
Composite numbers  
Divisible by  
HCF: highest common factor =PGCD  
LCM: lowest common multiple =PPCM

## Nombres

Digits, figures  
million  
billion  
tally  
Natural number  
Whole number  
Integer  
Decimal  
Rational  
Recurring: 0,1111....  
Real, Irrational  
A surd  
The number line  
Scientific notation  
Interval, Closed interval  
x belongs to IR  
 $\infty$ : infinity  
 $x^2$ : x squared  
x cubed  
x to the fourth power  
exponent, power  
index, submit  
x/y: x over y  
order  
 $x > y$  x is greater than y  
 $x \geq y$ : x is greater than or equal to y  
 $x < y$ : x is less than  
( ): brackets  
[ ]: square brackets  
square root  
cube root  
fourth root  
 $x^n$ : x to the nth power  
x%: x per cent  
n!: n factorial  
Ratio  
Quotient  
Fraction  
Common denominator  
Least common denominator  
Common factor  
coefficient  
Approximate value  
Expected value  
An estimate  
Approximation  
roughly  
Rounded  
Rounding error  
Rounded down  
Rounded up  
Correct to n significant figures  
Rounded to the nearest 10,1,0.1...

x and y are in direct proportion=y is proportional to x

## Fonctions

Domain (definition set)  
Co domain  
variable  
Image  
Variation table  
Maximum  
minimum

Derivative  
Gradient = rate of variation  
 $f'(x)$ : f dash x, the first derivative of f with respect to x

$f''(x)$ : f double-dash x  
Slope  
Tangent  
asymptote  
To differentiate

Linear function  
Affine function  
Square function  
parabola  
Reciprocal function  
hyperbola  
Cube function  
Circular functions  
A polynomial  
degree  
A quadratic, a trinomial  
A quadratic equation  
Discriminant  
A rational function  
Composite function  
Even function  
Odd function  
Periodic function  
Logarithm = ln  
Common logarithm = $\log_{10}$   
Exponential function  
Cosine x  
Sine x  
Tangent x  
sinusoidal  
 $|x|$ : absolute value of x  
Discriminant  
A bound  
Continuous at the point...  
Discontinuous  
Differentiable  
Monotonic  
Increasing  
Decreasing  
inverse function

## Géométrie

point  
Reference system=  
origin+basis  
A Cartesian system of  
coordinates  
The x-axis  
The y-axis  
A quadrant  
The x-intercept  
The y-intercept  
Axis, line of symmetry  
Abscissa  
Ordinate  
Coordinates  
Cartesian coordinates  
Polar coordinates  
Analytic geometry=  
coordinate geometry  
tesselation

## Circles

pi  
Inscribed circle  
Circumscribed circle  
Radius  
diameter  
Centre  
Arc  
chord  
circumference  
concentric circles  
sector  
semicircle  
unit circle  
  
Compass  
Protractor  
Set square

## Angles

Acute angle  
Central angle  
Obtuse angle  
Right angle  
Straight angle  
Vertically opposite angles  
Complementary angles  
Supplementary angles  
Alternate angles  
Corresponding angles

## Triangles

Side, edge  
Vertex (vertices)  
scalene  
Equilateral  
Isosceles  
Right-angled  
hypotenuse  
Adjacent side  
Opposite side  
Congruent triangles  
Similar triangles  
Scale factor  
  
Bisector  
Median / centre of gravity  
Altitudes / orthocentre  
Perpendicular bisector  
Concurrent lines  
  
Circumcentre  
Circumcircle  
  
Cosine rule  
Sine rule  
trigonometry

## Principales figures

Base  
face  
Curve  
Net  
spiral  
solid  
Diagonal  
regular  
polygon  
quadrilateral  
Square  
rectangle  
Parallelogram  
Rhombus  
Trapezium  
kite  
Cube  
Cuboid= rectangular  
parallelepiped  
Sphere  
hemisphere  
Cylinder  
cone  
helix  
plane  
prism  
pyramid  
torus

## Lines

Half line  
Line  
straight  
Rectilinear  
secant  
To intersect (Two lines  
which intersect each other  
are secant)  
transversal  
Parallel  
perpendicular  
Segment  
Midpoint  
Equidistant  
  
Equation of a line  $y=ax+b$

## Vectors

Direction  
sense  
Length, norm  
Collinear  
orthogonal  
barycentre  
scalar product

## Transformations

Translation  
dilation  
Reflection  
Rotation  
trajectory

## Nombres complexes

i  
Algebraic form  
Trigonometric form  
Exponential form  
Real part  
Imaginary part  
Modulus  
Argument  
Conjugate  
Locus  
Complex set

## **Statistiques**

statistics  
data  
Chart  
Diagram  
Bar chart  
Histogram  
Pie chart  
Flow chart  
Boxplot

frequency  
Mean, average  
Weighted mean  
Median  
quartile  
Mode  
Standard deviation  
variance  
Interquartile range  
Class interval  
Cumulative frequency

Population  
Opinion survey  
Rate  
Simple interest  
Compound interest  
sample  
representative sample  
random sample  
discount

## **Probabilités**

Experiment  
universe  
Involving randomness  
At random  
Chance  
Event  
Independent events  
Mutually exclusive events  
Outcome  
Probability  
Tree diagram  
Equally likely  
Equally probable  
Permutation

n among k:  $\binom{n}{k}$

The binomial formula  
Binomial coefficients  
Pascal's triangle  
Die (dice)  
Coin  
HT: heads or tails  
Density function  
Uniform law  
Exponential law

## **Suites**

Sequence  
term  
Arithmetic sequence  
Common difference  
Geometric sequence  
Common ratio  
Bounded  
The induction method  
By induction  
Initial step  
Recurring step  
Conclusion

$\sum_{i=1}^n$  the sum from 1 equals  
one to n  
convergent  
a definite limit  
divergent

## **Integrales**

Primitive  
 $\int_a^b f(t)dt$  : the integral from  
a to b of f  
area enclosed between...

## **Géométrie dans l'espace**

Plane  
Cartesian equation of a  
plane:  $ax+by+cz+d=0$   
Coplanar  
parametric system of  
equations of a line

## **Mathematicians**

Pythagoras (-550)  
Geometry

Euclid (-300)  
Geometry

Eratosthenes (-250)  
Numbers and measures

Archimedes (-250)  
Physics of geometry

Fibonacci (1200)  
Algebra

Napier (1580)  
Logarithms

Descartes (1620)  
Coordinates geometry

Fermat (1630)  
Coordinates geometry

Pascal (1650)  
Probabilities

Leibniz (1670)  
Calculus

Newton (1670)  
Calculus

Bernoulli (1680)  
Differential equations

Euler (1730)  
Pure and applied maths

Gauss (1800)  
Numbertheory

Cauchy (1820)  
Calculus

Noether (1920)  
Algebra

Neumann (1950)  
Group theory