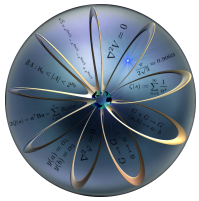

planetmath.org

Math for the people, by the people.

parametre

Canonical name	Parametre
Date of creation	2013-03-22 17:06:59
Last modified on	2013-03-22 17:06:59
Owner	pahio (2872)
Last modified by	pahio (2872)
Numerical id	17
Author	pahio (2872)
Entry type	Definition
Classification	msc 00A05
Synonym	parameter
Related topic	Indeterminate
Related topic	DerivativeForParametricForm
Related topic	Curve
Related topic	PerimeterOfAstroid
Related topic	CissoidOfDiocles
Related topic	Variable
Related topic	SurfaceNormal
Defines	auxiliary variable
Defines	parametric form
Defines	parametric presentation
Defines	parameter of parabola

Parametre means often a quantity which is considered as constant in a certain situation but which may take different values in other situations; so the parametre is a "variable constant". But in giving a curve or a surface in *parametric form*, the parametres work as proper variables which determine the values of the coordinates of the points; then we can describe the parametres as "auxiliary variables".

The parametric

$$\begin{cases} x = a\cos t \\ y = a\sin t \end{cases}$$

of the origin-centered circle of parametres: a (the radius) is a variable constant which is held constant all the time when one considers one circle; t is an auxiliary variable which has to get all real values (e.g. from the interval $[0,\, 2\pi]$) for obtaining all points of the perimetre.

In the analytic geometry, one speaks of the *parametre of parabola* (a.k.a. *latus rectum*): it means the chord of the parabola which is perpendicular to the axis and goes through the focus; it is the quantity $2p$ in the standard equation $x^2 = 2py$ of the parabola (p is the distance of the focus and the directrix).