

User Defined Plane Curves in 3DXM*

Selection of one of these entries will open a dialog to enter the data the user wishes. Default examples are provided.

User Cartesian: enter $x(t) := \dots$, $y(t) := \dots$

User Polar: enter $r(t) := \dots$, $\varphi(t) := \dots$

The curve is $(r(t) \cos(\varphi(t)), r(t) \sin(\varphi(t)))$.

User Graph: enter $y(t) := \dots$, implied is $x(t) := t$. The curve $(t, y(t))$ is the Graph of the function y . Three approximations are shown: *Taylor*, *Interpolation*, *Fourier*.

These are the explicitly parametrized user curves. The standard decorations are available: Parallel Curves, Generalized Cycloids, Osculating Circles, Family of Normals and their Envelope, Caustics from Rotated Normals.

User Implicit: enter level function $F(x, y) := \dots$

See the separate text: *Implicit Planar Curves* above, available also from the Documentation Menu (after selection of user defined implicit curve).

User Curvature: enter the curvature function $\kappa(s) := \dots$

The program assumes that the parameter s is arc length. See also the text below: *User Curves By Curvature*, again available from the Documentation Menu of 3DXM.

H.K.

* This file is from the 3D-XplorMath project. Please see:

<http://3D-XplorMath.org/>