

The Distance Trisector Curve

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A distance trisector curve is the graph of a function f such that every point on the graph of f is equidistant from some point p and some point on the graph of $-f$. Likewise all the points on the graph of $-f$ are equidistant to some point q and to some point on the graph of f . This curve is actually a special case of a more general type of curve that separates spaces between two points p and q into k equal regions. We will discuss the existence of the distance trisector curve, and moreover discuss the uniqueness. Along the way we will encounter some useful notation, and a method for iteratively finding coefficients in the series expansion of our function.

References

- [1] Tetsuo Asano *School of Information Science*, Jiří Matoušek *Charles University*, Takeshi Tokuyama *Tohoku University*
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- [2] Juan Monterde *Universitat de València*, Fausto Ongay *Centro de Investigación en Matemáticas*
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