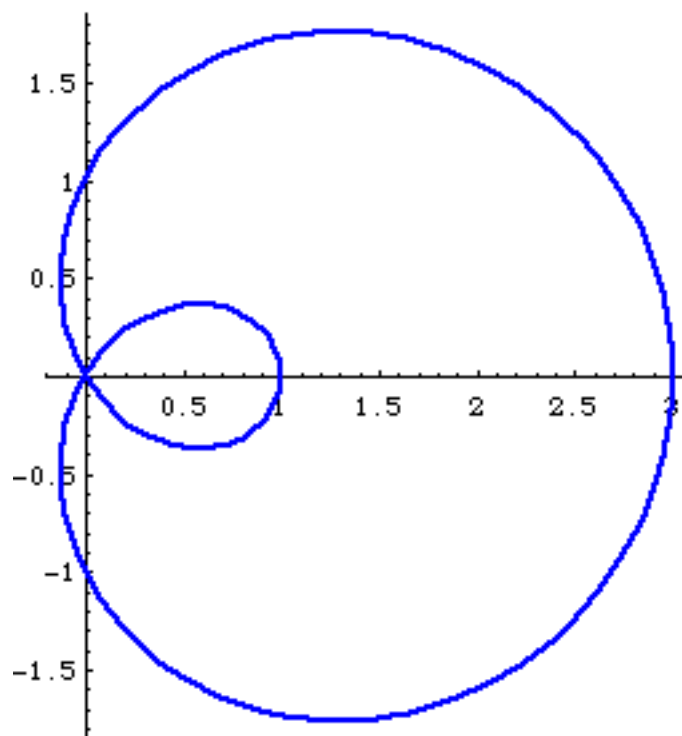


Trisectrix *



Throughout history up to 1700s, by the influence of Greek Mathematics, many curves have been invented to solve the problem of dividing a given angle into 3 equal parts. That is, these curves have properties such that certain special points or lines on the curve forms $1/3$ the angle of other special points or lines on the curve.

Trisectrix is a general name for curves that can be used to trisect an angle. The name trisectrix is often reserved for a special case of

*This file is from the 3D-XploreMath project.
Please see <http://rsp.math.brandeis.edu/3D-XplorMath/index.html>

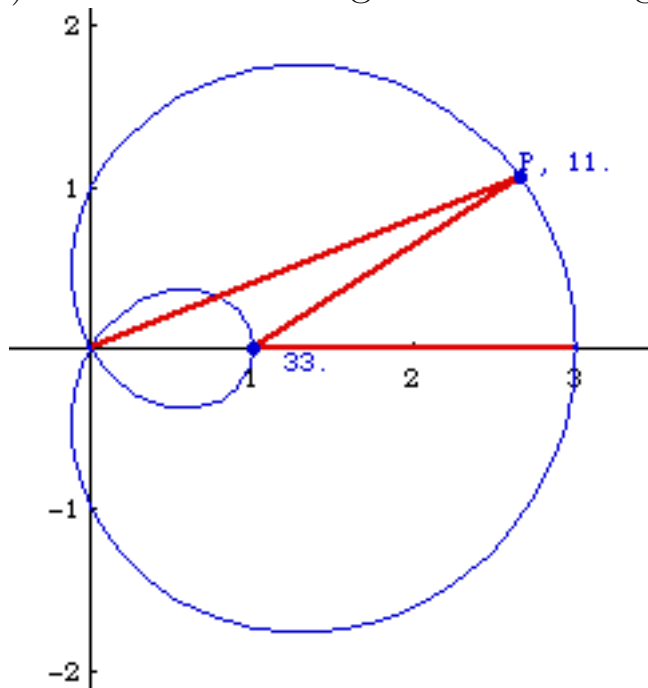
limaçon of Pascal, which we discuss here. Other famous trisectrix include trisectrix of Maclaurin and conchoid of Nicomedes.

Parametric: $(1 + 2 \cos(\theta))(\cos(\theta), \sin(\theta)), 0 \leq t < 2\pi$.

Polar: $r = (1 + 2 \cos(\theta))$

Cartesian: $(-2x + x^2 + y^2)^2 = x^2 + y^2$

Let P be any point on the outer loop of the curve. The angle formed by $P, (1,0), (3,0)$ is three times larger than the angle $(0,0), P, (1,0)$.



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