Calculus 3

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1 Parametric Equations and Polar Coordinates

1.1 Parametric Equations

If x and y are continuous functions, then

$$x = x(t) \text{ and } y = y(t)$$

are parametric equations, and t is the parameter. The points that are obtained when t is varied over an interval is the graph, or is called the parametric curve.

To understand parametric functions further, you can eliminate the parameter by relating t to x and y. For the function $x(t) = 4\cos t$ and $y(t) = 3\sin t$, divide both sides by 4 and 3 respectivly and plug the cosine and sin functions into the Pythagoreus identity to create the equation of a circle.