

Exploring a Parametric Curve

a) Describe the curve traced out by the parametrization:

$$\begin{aligned}x &= t \cos t \\y &= t \sin t,\end{aligned}$$

where $0 \leq t \leq 4\pi$.

b) Set up and simplify, but do not integrate, an expression for the arc length

$$\int_0^{4\pi} \frac{ds}{dt} dt \text{ of this curve.}$$

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