

Exercise 19

For the following exercises, sketch the parametric equations by eliminating the parameter. Indicate any asymptotes of the graph.

$$x = t^3, \quad y = 3 \ln t$$

Solution

The equation for y becomes

$$\begin{aligned} y &= 3 \ln t \\ &= \ln t^3 \\ &= \ln x. \end{aligned}$$

Because x is never negative, this is only the right half of a parabola. Below is a plot of the parametric equations for $0 < t \leq 2$.

