

Exercise 17

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

$$x = e^t, \quad y = e^{2t}$$

Solution

The equation for y becomes

$$\begin{aligned} y &= e^{2t} \\ &= (e^t)^2 \\ &= x^2. \end{aligned}$$

Because x is never negative, this is only the right half of a parabola. Below is a plot of the parametric equations for $-10 \leq t \leq 1.3$.

