

Math 1060 ~ Trigonometry

25 Parametric Descriptions for Oriented Curves

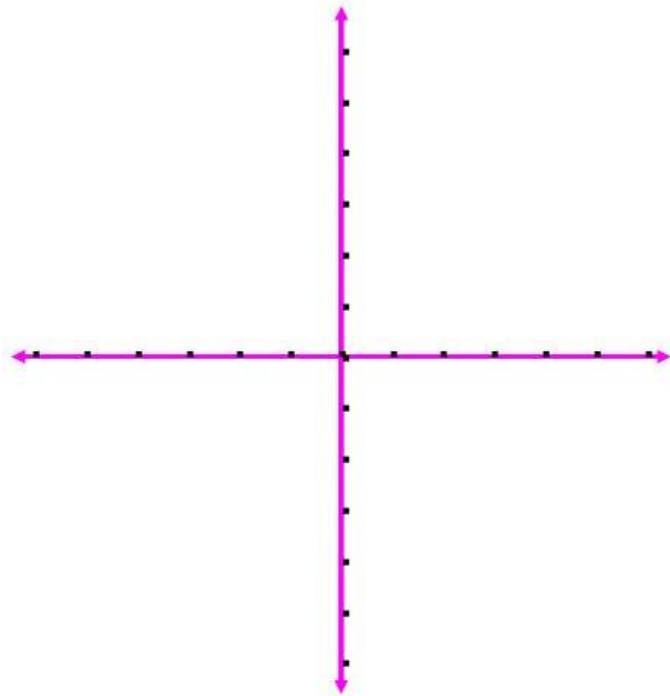
Eliminating the Parameter in Parametric Equations

To eliminate the parameter, we solve one equation for t and use substitution to arrive at a single equation in terms of x and y .

EX 1

Eliminate the parameter in this system of equations from the previous lecture.

$$\begin{cases} x = 2t + 1 \\ y = t^2 - 2 \end{cases} \quad t \geq -2$$

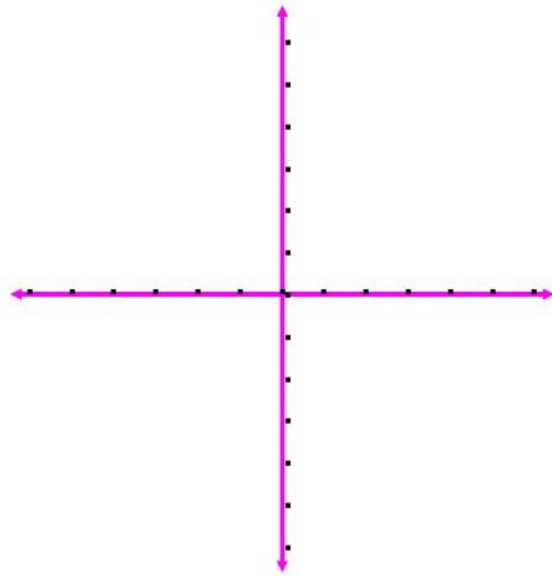


If the parametric equations have trigonometric expressions, using one of the Pythagorean Identities might be useful.

EX 2

Eliminate the parameter in this set of equations and sketch the curve.

$$\begin{cases} x = 2\cos t \\ y = 1 + 3\sin t \end{cases} \quad 0 \leq t \leq \frac{3\pi}{2}$$



EX 3

Find a parameterization for each of these equations and sketch each one.

3a)

$$3x - y^2 = 2 \text{ from } x = -2 \text{ to } x = 3$$

3b)

$$x^2 - 2x + y^2 + 4y = 4$$

