Definition: Suppose a curve C in the plane consists of the set of points of the form (x, y) where

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

for some pair of continuous functions f and g defined on an interval I. The equations $x = f(t)$ and $y = g(t)$ are said to give a **parametric representation** of C in the parameter t.

EXAMPLE 1: Sketch the curve given by $x = 2t + 1$ and $y = 4t^2 - 1$ where $-1 \leq t \leq 1$.

EXAMPLE 2: Sketch the curve given by $x = \cos\theta$ and $y = \sin\theta$ where $0 \leq \theta \leq 2\pi$.

EXAMPLE 3: Sketch the curve given by $x = t^2$ and $y = t^3$.

EXAMPLE 4: Sketch the curve given by $x = \cos t$ and $y = \cos 2t$.