

10.1 Videos Guide

10.1a

- Typical forms of parametric equations
 - $x = f(t), \quad y = g(t)$
 - OR $x = f(\theta), \quad y = g(\theta)$

Exercises:

- (a) Sketch the curve by using the parametric equations to plot points. Indicate with an arrow the direction in which the curve is traced as t increases.
- (b) Eliminate the parameter to find a Cartesian equation of the curve.
 - $x = 3t + 2, \quad y = 2t + 3$
 - $x = t^2, \quad y = 1 - t$

10.1b

Exercises:

- (a) Eliminate the parameter to find a Cartesian equation of the curve.
- (b) Sketch the curve and indicate with an arrow the direction in which the curve is traced as the parameter increases.
 - $x = \sqrt{t + 1}, \quad y = \sqrt{t - 1}$
 - $x = \tan^2 \theta, \quad y = \sec \theta, \quad -\pi/2 \leq \theta \leq \pi/2$

10.1c

- Parametric equations of a cycloid
 - $x = r(\theta - \sin \theta), \quad y = r(1 - \cos \theta)$