

9.1 Parametric Equations

Calculus

Name: _____

CA #1

1. For $x = t^2 - 2t$ and $y = t + 1$, eliminate the parameter and write the corresponding rectangular equation.
2. If $x = 3 \sin 2t$ and $y = 4e^{2t}$ then $\frac{dy}{dx} =$
3. A curve is described by the parametric equations $x(t) = t^2 + 3$ and $y(t) = t^3 + t^2 + 1$. Find an equation of the line tangent to this curve at the point determined by $t = 1$.
4. A curve is defined by the parametric equations $x(t) = t^3 + 1$ and $y(t) = t^2 + 10t$. For what values of t is the line tangent to this curve horizontal?
5. What is the slope of the tangent line to the curve defined parametrically by $x(t) = \sqrt{t}$ and $y(t) = \frac{1}{4}(t^2 - 4)$, $t \geq 0$ at the point (2,3)?

1. $x = y^2 - 4y + 3$	2. $\frac{4e^{2t}}{3 \cos 2t}$	3. $y = \frac{2}{5}x - 7$	4. $t = -5$	5. 8
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