

1. Consider the curve defined parametrically by  $x = 2t^2 + 1$  and  $y = 3t^3 + 2$ . Find the equation for the line tangent to the curve at time  $t = 1$ .
2. A curve C is defined by the parametric equations  $x = t^2 - 4t + 1$  and  $y = t^3$ . Find the equation of the line tangent to the graph of C at the point  $(-2, 27)$ ?
3. A curve C is defined by the parametric equations  $x = t^2 - 4t + 1$  and  $y = t^3$ . Determine the times that the curve has a horizontal tangent and a vertical tangent.