HW Quiz B (Graphing functions and derivatives)  

Name________________________

1. Graph the derivative of the functions given below

2. Graph the function given the graph of the derivative function

3. Sketch the graph of a continuous function \( f \) with \( f(0) = 1 \) and 
   \[ f'(x) = \begin{cases} 
   -1, & x < -1 \\
   3, & x > -1 
\end{cases} \]
4. Consider the curve defined parametrically by $x = 2t^3$ and $y = 3t^2 - 2t$. Find the equation for the line tangent to the curve at time $t = 1$.

5. A curve $C$ is defined by the parametric equations $x = 2t^3$ and $y = 3t^2 - 2t$. Find the equation of the line tangent to the graph of $C$ at the point $(16, 8)$?

6. A curve $C$ is defined by the parametric equations $x = 2t^3$ and $y = 3t^2 - 2t$. Determine the times that the curve has a horizontal tangent and a vertical tangent.