1. Find the derivative of each of the following functions. You do not need to simplify your answers.
   1A. \( m(x) = e^{\sin(2x)} \)

   1B. \( q(x) = (x^3 + \log_2 x) \cdot x^5 \)

   1C. \( k(x) = \ln(\sqrt[3]{x^4 + \cos(7x) + x^5}) \)

   1D. \( p(x) = \frac{\sin(x) + x^6}{x^5 + \cos(x)} \)
2. The equation $x^4 + y^3 = x^2y^2 + 1$ implicitly defines $y$ as a function of $x$, and a graph of this equation is shown at the bottom of the page.

2A. Use implicit differentiation to find $y'$.

2B. The graph implies that $(1, 1)$ is a solution of the equation; show that $(1, 1)$ does indeed satisfy the equation.

2C. Use the answer to 2A to find the slope of the graph of the equation at $(1, 1)$. 

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*Graph of the equation $x^4 + y^3 = x^2y^2 + 1$ showing the point $(1, 1)$.*