Name ________________________________

- No calculators allowed.
- Show sufficient work to justify each answer.
- You have 15 minutes for this quiz.

1. (3 points) Find the slope of the line tangent to the graph of \( \frac{x^3}{y} - \frac{y^2}{16} + xy = 14 \) at the point (3, 4).

2. (3 points) Differentiate \( y = 2t \tan^{-1} (3t^2 + \pi e + et) \)
3. (4 points) Compute \( \frac{dy}{dx} \) given that \( \ln(x^2y^3) = x^3 + y^5 \).