Read each question carefully and be sure to SHOW ALL WORK. Correct answer without proper justification will not receive a "Complete" grade. Paç fat! Good luck!

Name: _____

LO 16. Integration Techniques and Differential Equations Challenge. I can use improper integrals and differential equations creatively in new situations that require a deep understanding of them.

Criteria for Success: I can solve conceptual questions related to improper integrals and differntial equations that lie on the top half of Bloom's Taxonomy (analyze, evaluate, and create).

Question: Create two differential equations with a common solution $y = e^{x^3}$, and then find their general solutions. **Hints:** For one you can express y' as a function of x (ex: $y' = 2x$), and for the other one you can express y' as a product of a function of x and a funcion of y (ex: $y' = x^2(y + 1)$).