Name: ───────────────────────────────

There are 20 points possible on this quiz. This is a closed book quiz and closed note quiz. Calculators are not allowed. If you have any questions, please raise your hand.

1. Evaluate the iterated integral $\displaystyle\int_0^1 \int_0^{e^x} \sqrt{1 + 3e^x}\, dy\, dx$

2. Evaluate the double integral $\displaystyle\iint\limits_D e^{-x^2}\, dA$ where $d = \{(x, y) \mid 0 \le x \le 3,\ 0 \le y \le x\}$.

3. Sketch the region of integration and then reverse the order of integration for the integral $\int_0^4 \int_{\sqrt{x}}^2 \sqrt{y^2 + 1} \, dy \, dx$. [NOTE: You do not need to evaluate the integral.]

4. **Set up** the iterated integral to find volume of the solid under the surface $z = 2 + x^2 + \sin(y)$ and above the region bounded by the parabolas $y = x^2$ and $x = y^2$. [NOTE: You do not need to evaluate the integral.]