1. Evaluate the iterated integral $\displaystyle\int_0^2 \int_1^3 x^3 y^2 \, dy \, dx$.

2. Evaluate the iterated integral $\displaystyle\int_0^1 \int_0^{y^3} e^{x/y} \, dx \, dy$.

3. Consider the double integral
$$\iint_D (x^2 + 4y^3) \, dA,$$
where D is the triangular region bounded by the lines $x = 1$, $y = x$, and $y = -x$.
   (a) Sketch the region D.
   (b) Express I as an iterated integral and evaluate it.