Q1. Evaluate the iterated integral

\[ \int_0^4 \int_0^2 \frac{1}{\sqrt{y^3 + 1}} \, dy \, dx \]

Q2. Find the volume of the solid whose base is the region in the xy plane that is bounded by the parabola \( y = 4 - x^2 \) and the line \( y = 3x \) while the top of the solid is bounded by the plane \( z = x + 4 \).