1. Find the volume of the region bounded above by the surface \( z = 100 - 6xy^2 \) and bounded below by the rectangle \([-1, 1] \times [0, 2]\).

2. For the integral \( \int_0^1 \int_y^1 f(x, y) \, dx \, dy \) sketch the region of integration and then write an equivalent iterated integral with order of integration reversed.