Q1) Use Green’s theorem to evaluate \( \oint_C xy^2 \, dx + \cos^2 y \, dy \) where C is region in the first quadrant bounded by graphs of \( y = x^2, y = x^3 \).

Q2) Set up a double integral in a region R in terms of suitable coordinates that gives surface area of portion of the sphere \( x^2 + y^2 + z^2 = 4 \) in the first octant. (Do not evaluate the double integral, but it should be in suitable coordinates)