Q1) Set up a double integral in a region $R$ in terms of suitable coordinates that gives surface area formed by $z = x^2 + y^2; z = 1; z = 4$ in the first octant. (Do not evaluate the double integral, but it should be in suitable coordinates.)

Q2) Use Green’s theorem to evaluate $\oint_C (x + y)dx + \sin ydy$ where $C$ is boundary of region formed by $y = x; y = x^2$. 