Name:
Student ID #:

**Question 1**. Evaluate the double integral $\iint_R xe^{xy} \, dxdy$ where $R : 1 \leq x \leq 2, 0 \leq y \leq 1$.

**Question 2**. Find the volume of the solid under the paraboloid $z = 3x^2 + y^2$ and above the region bounded by $y = x$ and $x = y^2 - y$.

**Question 3**. Express the area of the triangle with vertices $(0,0)$, $(1,2)$, and $(2,1)$ using double integrals. Do not evaluate any of the integrals.

**Your Solution**.