

Name:.....Serial#:.....Sec #:.....

Q.1: Estimate volume of the solid that lies below the surface $z = 2x^2 + y^2$ and above the rectangle $R = [0, 2] \times [0, 4]$. Use a Riemann sum with $m = 2$ and $n = 4$ and choose upper right corner points.

Q.2: Find exact volume of the solid that lies below the surface $z = 2x^2 + y^2$ and above the rectangle $R = [0, 2] \times [0, 4]$.

Q.3: Evaluate the double integral $\int_0^2 \int_{2y}^4 6e^{x^2} dx dy$. (Hint: Change order of integration)

Q.4: Use double integral to find the area enclosed by one loop of the graph of $r = \cos(3\theta)$.