King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 (181) Sec 02 - Quiz 2

Name: ID: Serial No.:

1. Find the average value of the function $f(x) = 12x^2 + 10ax + 5$ on the interval $[a, 0]$ is 4. Find the sum of all such numbers a.

2. Find the volume of the solid obtained by rotating the region bounded by the curves $y = \ln x, \quad x = 1, \ x = e$ and $y = 0$ about $y = -1$.

3. Using the method of cylinderical shells, find the volume of the solid generated by rotating the region bounded by the curves $y = 4x - x^2$ and $y = x$ about $x = -2$.

4. The base of a solid S is bounded by $x = y^3$, $y = 1$ and the y-axis. If parallel cross-sections perpendicular to y-axis are equilateral triangles, then find the volume of the solid.