King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 (181) Sec 16 - Quiz 2

Name: ID: Serial No.:

1. Find the average value of the function $f(t) = t\sin(t^2)$ on the interval $[0, \sqrt{\pi}]$.

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 $x = -1$.

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.