King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 (181) Sec 10 - Quiz 2

Name: ID: Serial No.:

1. Find the average value of the function $f(x) = 3x^2 - 2ax - b$ on the interval $[a, b]$ $(a \neq b)$ is $-1/4$. Find the sum of all such numbers b.

2. Find the volume of the solid obtained by rotating the region bounded by the curves $y = \cos x$ and $y = 0$ for $0 \leq x \leq \frac{\pi}{2}$ 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 $y = x^2$ and $y = -x$ about $x = -1$.

4. The base of a solid S is the trainglar region with vertices $(0, 0)$, $(1, 0)$ and $(0, 1)$. Cross-sections perpendicular to y-axis are equilateral traingles. Find the volume of the solid S.