King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 (181) Sec 16 - Quiz 1

Name: ID: Serial No.:

1. Using three approximating rectangles and midpoints, to approximate the area under the graph of $f(x) = x^2 + 3$ from $x = 1$ to $x = 7$

2. Using the definition of the definite integral, to find the value of the limit

$$\lim_{n\to\infty} \sum_{i=1}^{n} \frac{10}{n} \sqrt{\frac{10n + 4i}{2n}}$$

3. By interpreting it as an area, find the value of the integral

$$\int_0^{3/2} \sqrt{9-4x^2}dx$$

4. Find the slope of the tangent line to the graph of the function $f(x) = \int_{\cos x}^{\sin(3x)} \sqrt{t^2+3}dt$ at $x = 0$.

5. Find the value of the integral $\int \frac{dx}{\sqrt{4x - 4x^2}}$

6. Suppose f is odd function on $\mathbb{R}$, such that $\int_2^1 f(x)dx = 2$ and $\int_{-2}^3 f(x)dx = 5$. Find $\int_{-3}^{-1} f(x)dx$