King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 (181) Sec 10 - Quiz 1

Name: ID: Serial No.:

1. Using three approximating rectangles and midpoints, to approximate the area under the graph of $f(x) = \dfrac{x+1}{x}$ from $x = 1$ to $x = 7$

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

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

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

$$\int_0^1 (|x+1| + 2\sqrt{1-x^2})dx$$

4. Find the slope of the tangent line to the graph of the function $f(x) = \displaystyle\int_0^{\sec(x)} \frac{1}{t^2-1} dt$ at $x = \frac{\pi}{4}$.

5. Find the value of the integral $\int e^{2x}\sqrt{1+e^x}dx$

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 $\int_{-3}^{-1} f(x)dx$