

1552 Quiz 1: Sample Questions

May 11, 2023

1 Question 1: Anti-derivative

Calculate the anti-derivative of the following function:

1. $f(x) = 5x^4 + e^{-6x}$
2. $f(x) = 13x^5 + 3\cos(-5x)$
3. $f(x) = 3x + \sec(2x)\tan(2x)$
4. $f(x) = 11x^3 + \frac{2}{1+(2x)^2}$

2 Question 2: Properties of definite integrals

1. $f(x)$ is an odd function. If $\int_3^5 f(x)dx = 5$, find $\int_{-3}^{-5} f(x)dx$.
2. $f(x)$ is an odd function. If $\int_2^6 f(x)dx = 7$, find $\int_{-2}^{-6} f(x)dx$.
3. $f(x)$ is an even function. If $\int_0^3 f(x)dx = 2$ and $\int_3^5 f(x)dx = 3$, find $\int_{-3}^{-5} f(x)dx$.
4. $f(x)$ is an even function. If $\int_0^4 f(x)dx = 3$ and $\int_4^6 f(x)dx = 5$, find $\int_{-4}^{-6} f(x)dx$.

3 Question 3: Riemann Sum

Use a general Riemann Sum

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n f(x_i^*) \Delta x$$

to evaluate the integral of

1. $f(x) = 7x + 5$ on the interval $[-2, 3]$
2. $f(x) = 8x + 6$ on the interval $[0, 4]$
3. $f(x) = 3x + 1$ on the interval $[-1, 4]$
4. $f(x) = 6x + 3$ on the interval $[-1, 6]$