Assignment 9

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

1) Let \( P \) be a partition of \([1, 5]\), and let \( x_0 \) be a point in the 6th sub-interval \([x_{i-1}, x_i]\). If
\[
\lim_{|P| \to 0} \sum_{i=1}^{n} (x_i - x_{i-1}) \text{ is expressed as an integral, then its value is}
\]
- 1
- 2
- 3
- 4

No, the answer is incorrect.
Score: 0
Accepted Answers: 2

2) Let \( P \) be a partition of \([-\pi, 9]\). Let \( x_0 \) be a point in the 4th sub-interval \([x_{i-1}, x_i]\). Then,
\[
\lim_{|P| \to 0} \sum_{i=1}^{n} \cos(x_i)x_i(x_0 - x_{i-1}) =
\]
- 0
- 1
- 2
- 3

No, the answer is incorrect.
Score: 0
Accepted Answers: 2

3) Let \( f(x) \) be a continuous function. Then,
\[
\lim_{n \to \infty} \frac{1}{n} \sum_{i=1}^{n} f(x_i) =
\]
\[
\int_a^b f(x)dx
\]
\[
\int_a^b f'(x)dx
\]
\[
\int_a^b f(x)dx
\]

No, the answer is incorrect.
Score: 0
Accepted Answers:
\[
\int_a^b f(x)dx
\]

4) \[
\lim_{n \to \infty} \frac{1}{n} \left( \sin(n\pi/6) + \sin(2n\pi/6) + \cdots + \sin(n\pi/6) \right) =
\]
- \(n/2\)
- 0
- \(n\)
- 2

No, the answer is incorrect.
Score: 0
Accepted Answers: \(n/2\)

5) \[
\lim_{n \to \infty} \int_0^1 \sqrt{1 + \cos^2(x^2)} dx
\]
\[
2\sqrt{2} + \cos^2(x^2)
\]
\[
\sqrt{2} + \cos^2(x^2)
\]
\[
\sqrt{2} + \cos(x^2)
\]

No, the answer is incorrect.
Score: 0
Accepted Answers:
\[
2\sqrt{2} + \cos(x^2)
\]

6) \[
\lim_{n \to \infty} \int_0^1 \sqrt{1 + x^2} dx =
\]
- \(\sqrt{2} - \sqrt{3}x^2\)
- \(\sqrt{2} + \sqrt{3}x^2\)
- \(\sqrt{2} - 3x^2\)
- \(\sqrt{2} + 3x^2\)

No, the answer is incorrect.
Score: 0
Accepted Answers:
\[-\sqrt{2}x + \sqrt{3}x^2 - x^3\]

Due on 2021-03-24, 22:59 IST.