32 Lecture - MTH101

Important Mcqs

What is the Second Fundamental Theorem of Calculus?

- A. It states that integration is the reverse of differentiation.
- B. It states that differentiation is the reverse of integration.
- C. It relates the integral of a function to its antiderivative.

Answer: C

What is the formula for the Second Fundamental Theorem of Calculus?

A. ?baf'(x)dx = F(b) - F(a)

B. ?abf(x)dx = F(b) - F(a)

C. ?abf(x)dx = F(a) - F(b)

Answer: A

If $f(x) = 2x^3$ and F(x) is an antiderivative of f(x), what is the value of ?23f'(x)dx using the Second Fundamental Theorem of Calculus?

A. 54

B. 32

C. 16

Answer: C

What is the relationship between the First and Second Fundamental Theorems of Calculus?

- A. The Second Fundamental Theorem of Calculus is a generalization of the First Fundamental Theorem of Calculus.
- B. The First Fundamental Theorem of Calculus is a generalization of the Second Fundamental Theorem of Calculus.
- C. The two theorems are unrelated.

Answer: A

What is the Second Fundamental Theorem of Calculus used for?
A. To find the derivative of a function.
B. To find the integral of a function.
C. To evaluate definite integrals.
Answer: C
If $f(x) = x^2$ and $F(x)$ is an antiderivative of $f(x)$, what is the value of $20f(x)dx$ using the Second Fundamental Theorem of Calculus?
A. 8
B. 12
C. 20
Answer: B
What is the derivative of $?x^2\sin(x)dx$ with respect to x ?
A. $x^2\sin(x)$
B. $sin(x)$
C. $2x\sin(x) - x^2\cos(x)$
Answer: C
If $F(x) = \frac{2x^3\cos(t)}{dt}$, what is $F'(x)$?
A. $x^2\sin(x)$
$B. \cos(x)$
C. $3x^2\cos(x)$

Answer: C

If $f(x) = 1/x$ and $F(x)$ is an antiderivative of $f(x)$, what is the value of $?11/2f(x)dx$ using the Second Fundamental Theorem of Calculus?
A. ln(2)
B. ln(1/2)
Cln(2)
Answer: B
What is the formula for the Second Fundamental Theorem of Calculus in Leibniz notation?
A. $d/dx ?a^x f(t)dt = f(x)$
B. $?ab f'(x)dx = f(b) - f(a)$
C. $d/dx ?a^x f'(t)dt = f(x)$
Answer: A