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^2sin(x)dx with respect to x?

A. x^2sin(x)

B. sin(x)

C. 2xsin(x) - x^2cos(x)

Answer: C

If F(x) = ?x^3cos(t)dt, what is F'(x)?

A. x^2sin(x)

B. cos(x)

C. 3x^2cos(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)

C. -ln(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