26 Lecture - MTH101

Important Mcqs

What is the main goal of integration by substitution?

A) To simplify complex integrals

B) To differentiate functions

C) To solve differential equations

D) To find limits of functions

Answer: A

What is the general formula for integration by substitution?

A) ?f(x)dx = F(x) + C

B) ?f(g(x))g'(x)dx = ?f(u)du

C) ?f'(x)dx = f(x) + C

D) ?e^x dx = e^x + C

Answer: B

What should be substituted in the integral ?x^2 e^(x^3) dx using integration by substitution?

A) x

B) e^(x^3)

C) x^3

D) 1/x

Answer: C

How do you evaluate the integral after making the substitution?

A) Apply the chain rule

B) Use trigonometric identities

C) Use integration by parts

D) Use standard integration rules

Answer: D

What is the derivative of the function u = sin(x)?

A) cos(x)

B) sin(x)

C) -cos(x)

D) -sin(x)

Answer: A

What is the substitution used for the integral ?x/(x^2+1) dx?

A) u = x^2

B) u = x^2+1

C) u = x^3

D) u = x/(x^2+1)

Answer: D

Can you use integration by substitution to evaluate definite integrals?

A) Yes

B) No

Answer: A

What is the importance of adjusting the limits of integration when using integration by substitution?

A) To simplify the integral

B) To make the integral more complex

C) To ensure that we are integrating over the same range in terms of the new variable

D) To evaluate the integral faster

Answer: C

What is the substitution used for the integral ?e^(2x+1) dx?

A) u = 2x

B) u = 2x+1

C) u = e^(2x+1)

D) u = e^(2x)

Answer: B

Can you use integration by substitution for all integrals?

A) Yes

B) No

Answer: B