21 Lecture - MTH101

Important Mcqs

What does the first derivative of a function represent?

a) The slope of the tangent line

b) The curvature of the function

c) The area under the curve

d) None of the above

Answer: a) The slope of the tangent line

What is the fundamental theorem of calculus?

a) Differentiation and integration are inverse operations.

b) The derivative of an integral function is equal to the original function.

c) The area under a curve can be found by integrating the function.

d) All of the above

Answer: d) All of the above

How is differentiation used in optimization problems?

a) To find the maximum or minimum value of a function

b) To find the area under a curve

c) To find the derivative of a function

d) None of the above

Answer: a) To find the maximum or minimum value of a function

What is the second derivative of a function?

a) The slope of the tangent line

b) The curvature of the function

c) The area under the curve

d) None of the above

Answer: b) The curvature of the function

What is the method of Lagrange multipliers used for?

a) To solve optimization problems with constraints

b) To find the derivative of a function

c) To find the area under a curve

d) None of the above

Answer: a) To solve optimization problems with constraints

How is differentiation used in physics?

a) To find the area under a curve

b) To find the maximum or minimum value of a function

c) To study motion and velocity

d) None of the above

Answer: c) To study motion and velocity

What is the complex derivative?

a) The derivative of a complex function

b) The derivative of a real function

c) The area under a complex curve

d) None of the above

Answer: a) The derivative of a complex function

What is the indefinite integral?

a) The derivative of an integral function

b) The integral of a derivative function

c) The area under a curve

d) None of the above

Answer: b) The integral of a derivative function

How is differentiation used in economics?

a) To study supply and demand curves

b) To maximize profits

c) To study the rate of change of a variable

d) All of the above

Answer: d) All of the above

What is the derivative of a constant?

a) Zero

b) One

c) The constant itself

d) None of the above

Answer: a) Zero