25 Lecture - MTH101

Important Mcqs

What is integration?

a. The process of finding the derivative of a function.

b. The process of finding the limit of a function.

c. The process of finding the area under a curve between two points.

d. The process of finding the slope of a tangent line.

Solution: c. The process of finding the area under a curve between two points is called integration.

What is the difference between a definite and indefinite integral?

a. A definite integral gives a function whose derivative is the original function.

b. A definite integral gives a specific numerical value for the area under a curve between two points.

c. A definite integral gives the slope of a tangent line to a curve at a specific point.

d. A definite integral gives the limit of a function as x approaches a specific value.

Solution: b. A definite integral gives a specific numerical value for the area under a curve between two points, while an indefinite integral gives a function whose derivative is the original function.

What is the method of cylindrical shells?

a. A method for finding the area between two curves.

b. A method for finding the arc length of a curve.

c. A method for finding the volume of a solid formed by revolving a curve around an axis.

d. A method for finding the limit of a function.

Solution: c. The method of cylindrical shells is a method for finding the volume of a solid formed by revolving a curve around an axis.

What is an antiderivative?

a. A function whose derivative is the original function.

b. A function whose limit is the original function.

c. A function whose slope is the original function.

d. A function whose area under the curve is the original function.

Solution: a. An antiderivative is a function whose derivative is the original function.

What is the constant of integration?

a. A value that is added to the antiderivative of a function.

b. A value that is subtracted from the antiderivative of a function.

c. A value that is multiplied by the antiderivative of a function.

d. A value that is divided by the antiderivative of a function.

Solution: a. The constant of integration is a value that is added to the antiderivative of a function.

How are integrals used in physics?

a. To find the area between two curves.

b. To find the volume of a solid formed by revolving a curve around an axis.

c. To find the work done by a force.

d. To find the arc length of a curve.

Solution: c. Integrals are used in physics to find the work done by a force.

How is the area between two curves found?

a. By finding the derivative of one curve.

b. By finding the derivative of both curves.

c. By integrating the difference between the two curves.

d. By integrating the sum of the two curves.

Solution: c. The area between two curves is found by integrating the difference between the two curves.

How is the arc length of a curve found?

a. By integrating the length of small segments of the curve.

b. By differentiating the length of small segments of the curve.

c. By finding the area under the curve.

d. By finding the volume of a solid formed by revolving the curve around an axis.

Solution: a. The arc length of a curve is found by integrating the length of small segments of the curve.

What is the relationship between integration and differentiation?

a. Integration and differentiation are unrelated.

b. Integration is the inverse of differentiation.

c. Integration is the same as differentiation.

d. Integration is the