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