# 24 Lecture - MTH101 

## Important Mcqs

## What is Newton's Method?

a) A numerical method to find the area under a curve
b) A numerical method to find the roots of a function
c) A method to find the maximum value of a function
d) A method to find the derivative of a function

Answer: b) A numerical method to find the roots of a function

How many endpoints does an interval have?
a) One
b) Two
c) Three
d) Four

Answer: b) Two

What is the significance of Rolle's Theorem?
a) It is used to find the area under a curve
b) It is used to find the maximum or minimum value of a function
c) It is used to find the roots of a function
d) It is used to prove the existence of a point where the derivative of a function is zero

Answer: d) It is used to prove the existence of a point where the derivative of a function is zero

## What is the Mean Value Theorem?

a) A theorem that states that the derivative of a function is equal to the average rate of change of the function over an interval
b) A theorem that states that the integral of a function is equal to the average value of the function over an interval
c) A theorem that states that the maximum or minimum value of a function occurs at a point where the derivative of the function is zero
d) A theorem that states that the area under a curve is equal to the antiderivative of the function

Answer: a) A theorem that states that the derivative of a function is equal to the average rate of change of the function over an interval

## Which theorem is an extension of Rolle's Theorem?

a) Mean Value Theorem
b) Intermediate Value Theorem
c) Fundamental Theorem of Calculus
d) Power Rule

Answer: a) Mean Value Theorem

What is the relationship between Newton's Method and the roots of a function?
a) Newton's Method is used to find the maximum value of a function
b) Newton's Method is used to find the minimum value of a function
c) Newton's Method is used to find the roots of a function
d) Newton's Method is used to find the slope of a tangent line to a function

Answer: c) Newton's Method is used to find the roots of a function

What is the formula for the Mean Value Theorem?
a) $f(b)-f(a)=(b-a) f^{\prime}(c)$
b) $f(b)-f(a)=(b-a) f(c)$
c) $f^{\prime}(b)-f^{\prime}(a)=(b-a) f(c)$
d) $f^{\prime}(b)-f^{\prime}(a)=(b-a) f^{\prime \prime}(c)$

Answer: a) $f(b)-f(a)=(b-a) f^{\prime}(c)$

How can Rolle's Theorem be used to find the maximum or minimum value of a function?
a) By finding the value of $c$ where the derivative of the function is zero
b) By finding the value of $c$ where the derivative of the function is undefined
c) By finding the value of c where the function is zero
d) By finding the value of $c$ where the function is undefined

Answer: a) By finding the value of c where the derivative of the function is zero

## What is the interval in the Mean Value Theorem?

a) The difference between the maximum and minimum values of a function
b) The difference between the endpoints of an interval
c) The slope of the tangent line to a function
d) The antiderivative of a

