

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) $f(b) - f(a) = (b - a)f'(c)$

b) $f(b) - f(a) = (b - a)f(c)$

c) $f'(b) - f'(a) = (b - a)f(c)$

d) $f'(b) - f'(a) = (b - a)f''(c)$

Answer: a) $f(b) - f(a) = (b - a)f'(c)$

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