12 Lecture - MTH101

Important Subjective

1. **What is continuity?**
   Answer: Continuity is the property of a function such that as the input variable approaches a particular value, the output value of the function approaches a specific limit.

2. **What is the importance of continuity in calculus?**
   Answer: Continuity is essential in calculus as it allows us to define the derivative and integral of a function.

3. **How is continuity related to limits?**
   Answer: The concept of continuity is closely related to the concept of limits, as it allows us to calculate limits precisely and make predictions about the behavior of a function as it approaches a particular point.

4. **How is continuity important in analytical geometry?**
   Answer: Continuity is important in analytical geometry as it allows us to describe the behavior of curves in space.

5. **What is the derivative of a function?**
   Answer: The derivative of a function is defined as the limit of the difference quotient as the interval between two points approaches zero.

6. **How is the concept of continuity related to the derivative of a function?**
   Answer: If a function is continuous at a point, then the derivative at that point exists and is defined as the slope of the tangent line to the curve at that point.

7. **What is the integral of a function?**
   Answer: The integral of a function is defined as the area under the curve between two points.

8. **How is the concept of continuity related to the integral of a function?**
   Answer: The concept of continuity allows us to make precise approximations of the area under the curve by reducing the width of the rectangles to zero.

9. **What is the limit of a function?**
   Answer: The limit of a function is defined as the value that the function approaches as the input variable approaches a particular value.

10. **How is continuity related to making predictions about the behavior of a function?**
    Answer: The concept of continuity allows us to make predictions about the behavior of a function as it approaches a particular point by calculating limits precisely.