4 Lecture - MTH101

Important Subjective

1. **What is a line in mathematics?**
   A line is a basic geometric object that is defined by two points.

2. **What is the slope of a line?**
   The slope of a line is a measure of how steep the line is. It is defined as the change in the y-coordinate divided by the change in the x-coordinate between two points on the line.

3. **Can the slope of a line be negative?**
   Yes, the slope of a line can be negative. A line with a negative slope falls as it moves to the right.

4. **What is the y-intercept of a line?**
   The y-intercept is the point at which the line crosses the y-axis. It is defined as the value of y when x is equal to zero.

5. **What is the slope-intercept form of the equation of a line?**
   The slope-intercept form of the equation of a line is y = mx + b, where m is the slope of the line and b is the y-intercept.

6. **How can you determine the slope of a line from its equation?**
   The slope of a line can be determined from its equation by identifying the coefficient of x in the equation.

7. **What is the tangent line to a function?**
   The tangent line is a line that touches the graph of a function at a given point and has the same slope as the function at that point.

8. **How can the equation of a line be used to determine the intersection points of two lines?**
   The equation of a line can be used to determine the intersection points of two lines by setting the equations of the two lines equal to each other and solving for the x and y values.

9. **Can a line intersect a circle at more than one point?**
   Yes, a line can intersect a circle at more than one point.

10. **How is the derivative of a function related to the slope of the function?**
    The derivative of a function is related to the slope of the function because it is defined as the rate at which the function changes with respect to its input. The derivative of a linear function is simply its slope.