## 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 $y=m x+b$, 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.

