## Higher Mathematics - Unit 1 - Checklist

## You have covered the following

Straight Line

- Distance formula
- Gradient of a straight line
- Equations of lines
- Perpendicular lines
- Parallel lines
- Collinearity of points
- Finding the equation of a perpendicular bisector, an altitude and a median
- Finding the point of intersection of two lines


## Functions and Graphs

- Evaluating a function
- Inverse functions
- Composite functions
- Domain, Range
- Exponential and Logarithmic functions
- Transformations of functions, including trig functions and exponential and logarithmic functions
- Exact values of $\sin , \cos$ and $\tan 30,45,60$ degrees and their radian equivalents and related angles.


## Differentiation

- Differentiating a function
- Calculating the rate of change of a function
- Calculating the gradient of a tangent to a curve
- Finding the equation of a tangent to a curve
- Identifying where functions are increasing and decreasing
- Identifying stationary points and their nature
- Sketching a curve
- Sketching the graph of the derivative of a function
- Finding the maximum and minimum values of a function on a closed interval
- Finding the maximum and minimum values of a function in context (optimisation)


## Recurrence Relations

- Using recurrence relations
- Evaluating a given term of a recurrence relation
- Devising and using a recurrence relation
- Finding the limit for a recurrence relation

