- Define the domain and range of a function and define and plot simple inverse trigonometric and hyperbolic functions.

- Sketch curves using properties such as symmetry, intercepts, discontinuities, turning points and asymptotic behaviour.

- Sum arithmetic, geometric and telescoping series; test series for convergence; find the Maclaurin series of a function; manipulate power series; use lHopitals rule.

- Integrate standard functions using substitution and parts; Apply to calculation of areas and volumes.

- Integrate numerically using Simpsons rule.

- Find partial derivatives of functions of two variables as well as higher partial derivatives; apply to analysis of small errors.

1 Week 3 Fundamentals and Functions

1. Exponentials and Powers

2. Logarithms

3. Factorizations

4. Number Types (natural numbers, real numbers, integers, rational numbers)