Foxford Learning Plan

Year 12

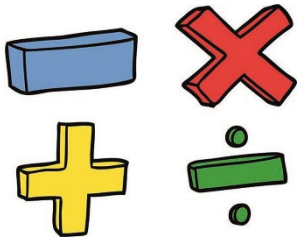
Topic Differentiation, Integration, Exponentials and Logarithms

Key Vocabulary

Derivative	Measures the change in y (output) with respect to the change in x (input).
Differentiate	Process of finding the derivative.
Tangent	A straight line that just touches a curve at a single point.
Normal	A line perpendicular to another given object.
Rate of Change	Gradient of one variable against another.
Stationary Point	When a curve's gradient is neither increasing nor decreasing i.e. the gradient is 0.
Integration	The process of finding displacement, area and volume .
Exponential	A function, equation or series that contains the term 'e' raised to a power.
Logarithm	The inverse function of an exponential.
Growth and decay	Mathematical change that increases or decreases depending on exponential function.

Key Skills

Over the course of the topic, I will be able to: -
Evaluate the gradient of a curve at any point using a Derivative.
Find stationary points and determine the nature of the point using second order Derivative.
Find Equations to Tangents and Normals to a curve using a derivative.
Calculate the area under a curve using an Integral.
Use Logarithms and Exponential to model solutions to real-world problems.



I will Understand

1. How to evaluate the gradient of a curve at any point using a derivative.
2. How to find stationary points and determine the nature of the point using second order derivative.
3. How to find Equations to Tangents and Normals to a curve using a derivative.
4. How to calculate the area under a curve using an Integral.