

What is Next?

MATHS 103

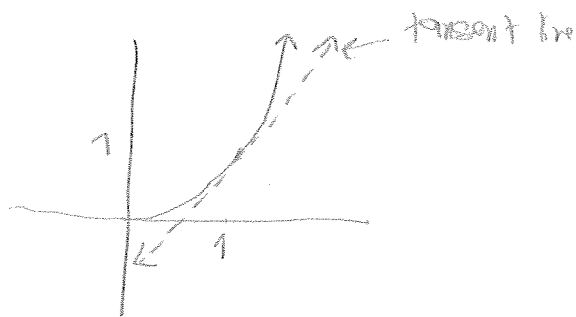


MATHS 104 "It is all about functions"

Calculus

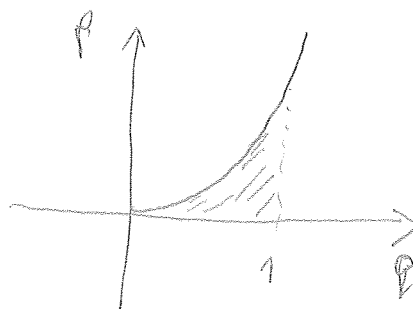
Differentiation

• We want to find the derivative of a function, which is finding the slope of the tangent line at the given point.



Integration

• We want to integrate a function, which is finding the area under the curve of the function.

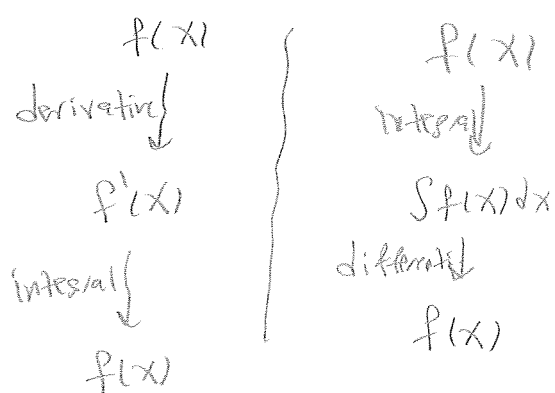


Note: we want to differentiate (integrate) all kind of functions
So in MATHS 104, the strategy will be

- 1- Find the derivative (integrate) of the basic functions, X^n , c , e^x , a^x , $\log_3 x$, $\ln x$,
- 2- Establish rules to find the derivative (integrate) of the new functions from the basic ones, i.e., rules for sum, difference, product, quotient, and composite, inverse.

Question: What is the relation between differentiation and integration? Why they are given together at the same course while they look so different (one measures the slope and one measures the area?).

Answer: The connection is given in the Fundamental Theorem of calculus which states (informally) that differentiation and integration are reversing each other!



So in MATHS104, we will study

- 1 - limit of a function.
- 2 - Derivative and its application.
- 3 - Integration and its application.