S09

MA 22000 – Topics List

I. Evaluating a function when the input is not numeric
- For example: $\dfrac{f(x+\Delta x)-f(x)}{\Delta x}$

II. Composition of functions

III. Finding limits
- Using a table
- From a graph
- By direct substitution
- By factoring and canceling
- In the definition of derivative (limit of a difference quotient)

IV. Finding values where function is not differentiable
- Using a graph

V. Using derivative rules
- Power rule
- Product rule
- Quotient rule
- General power rule (chain rule)

VI. Applications using the derivative
- Finding the slope/equation of a tangent line; finding point(s) where slope of a tangent line has a given value
- Finding the rate of change of a function
- Finding a marginal function and its use in estimating actual change
- Finding velocity
- Finding the value of a derivative at a given point

VII. Applications not using the derivative
- Finding the *y*-value of a point
- Finding the average rate of change
- Finding the actual change
- Estimating the slope of a graph at a point using a grid
- Estimating the average rate of change and rate of change of a function using a grid