MA 22000 – Topics List

I. 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)

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

III. Using derivative rules
    - Power rule
    - Product rule
    - Quotient rule
    - General power rule (chain rule)
    - Higher-order derivatives

IV. 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
    - Finding where the second derivative is zero
    - Finding intervals of increase/decrease

V. 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