

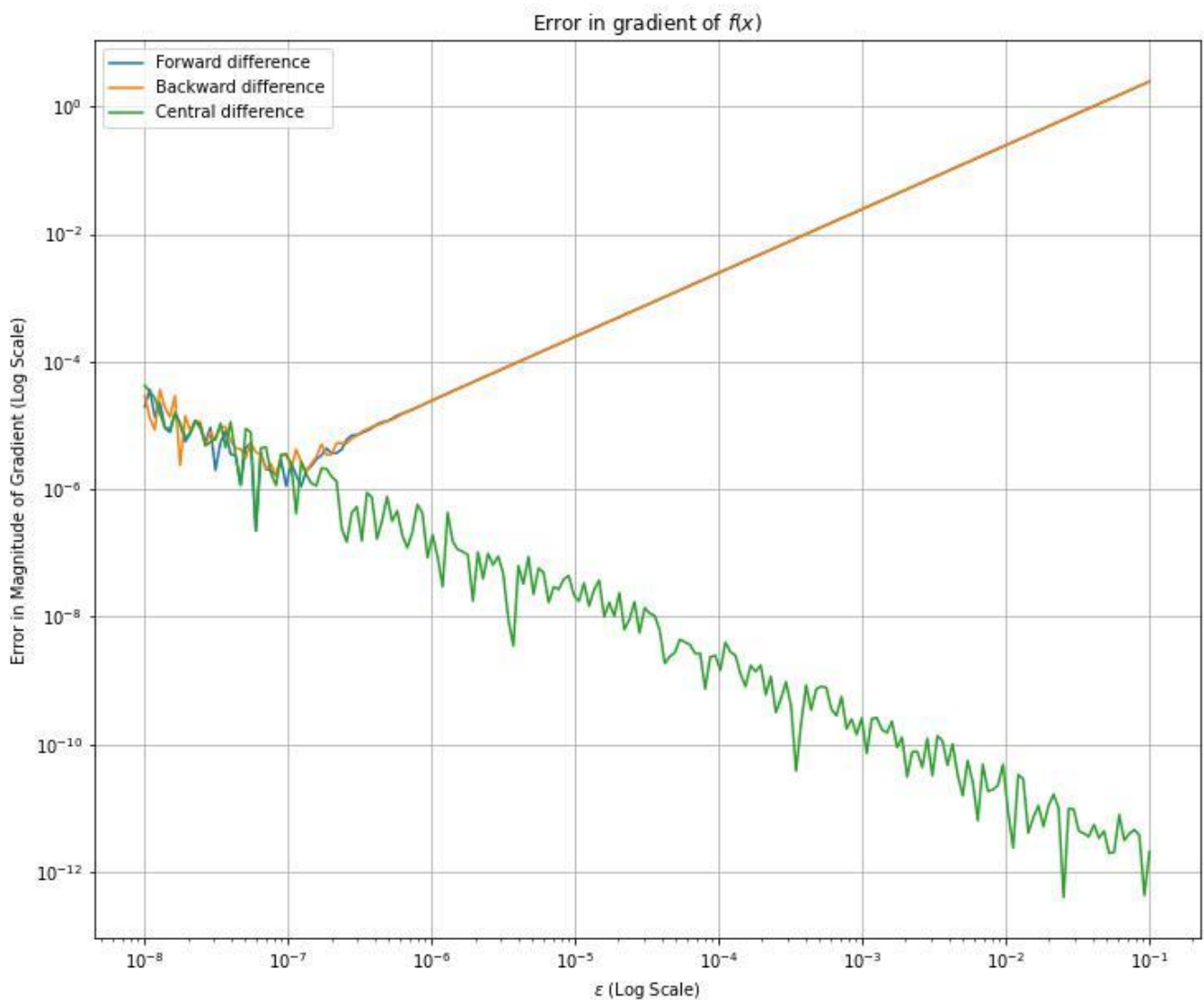
# Name – Mohit Garg

## Entry Number – 2020AM10657

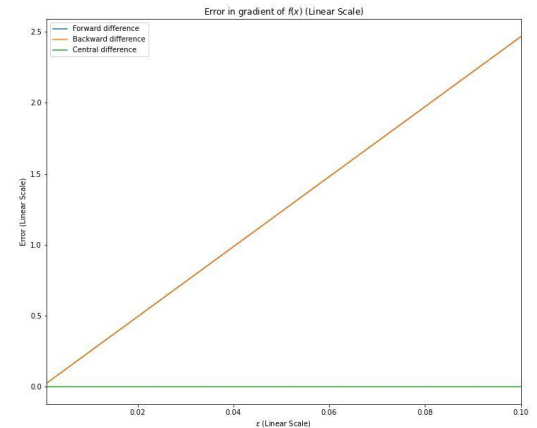
### Assignment 1

I have considered logarithmic scale based on  $10^{-8}$  to  $0.1$

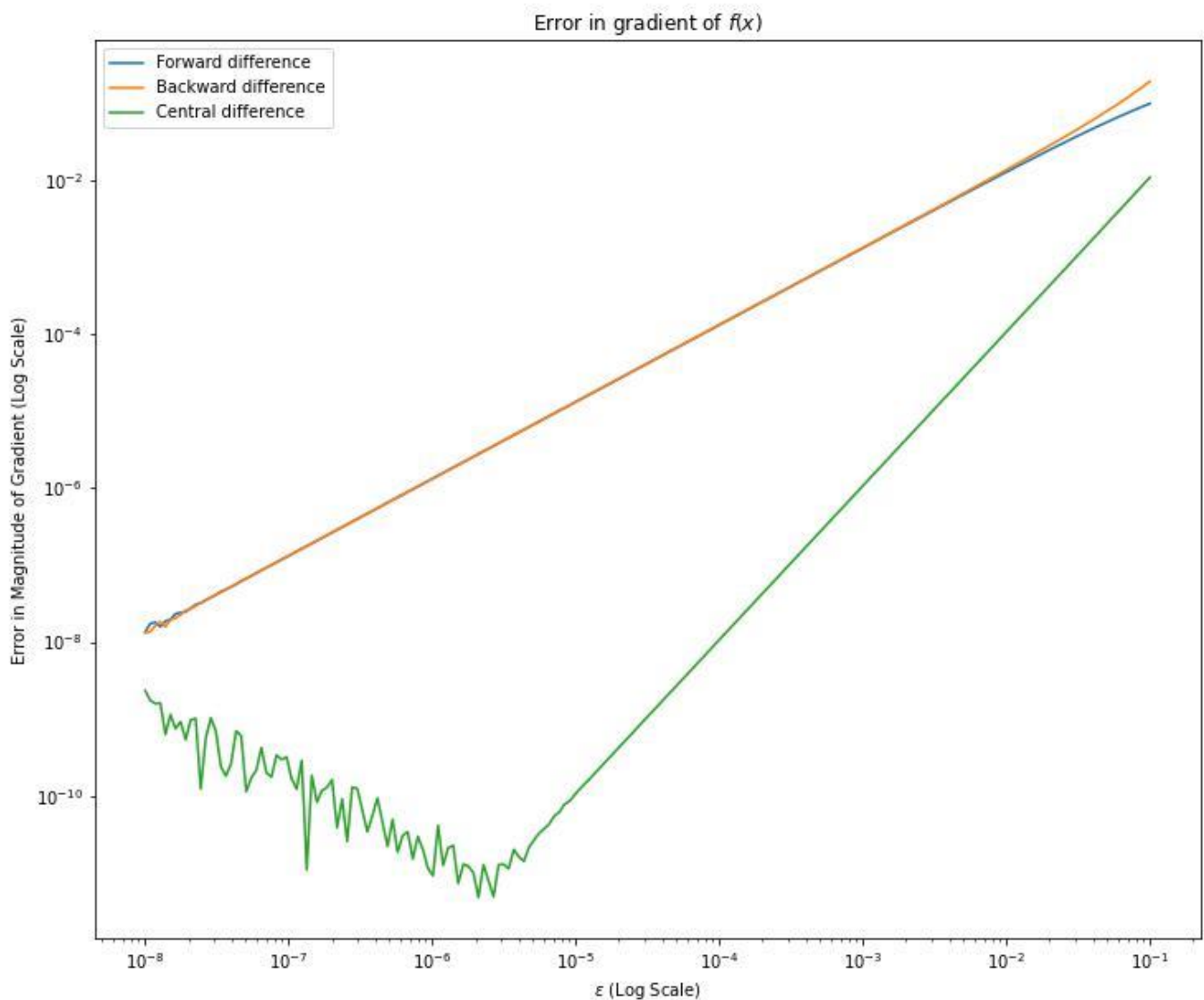
**Problem 1:-** Error vs Epsilon in log scale and linear scale



As one can see, forward and backward difference method shows same trend with minimum error at epsilon  $\sim 10^{-7}$  while central difference method shows decreasing trend towards increasing epsilon with error reaching  $10^{-12}$  at epsilon 0.1.



## Problem 2:- Error vs Epsilon in log scale and linear scale



As one can see, forward and backward difference method shows same linear trend (approx.) with minimum at minimum epsilon value considered i.e.,  $10^{-8}$  while central difference method shows decreasing trend till  $10^{-6}$ (minima) and then increasing trend towards increasing epsilon.

