Assignment

1. Let $f(x) = x^2$. By using forward, backward and central difference formula (1st order accuracy) and data points $x_0 = 0.5$, $x_1 = 1$ and $x_2 = 1.5$, find $f'(1)$. Then determine which method produces the best result.

2. The table below shows the weather forecast of a statistical data for rainfall per six years from 2000 - 2018

Year	2000	2006	2012	2018
Rainfall (mm)	445	568	746	935

a) find the rate of change of the rainfall in 2012 using the two-point central difference formula (Two point) Ans:

b) find the rate of change of the rainfall in 2006 using the three-point forward difference formula. Ans:

c) based on the information in (b), estimate the amount of rainfall for year 1994 by using the three-point backward difference. Ans: