

Assignment - 2A

$$x^4 + 3x^3 + 10$$

Iteration-1:-

$$\text{Let } x=2 \text{ and } \eta=0.01$$

$$4x^3 + 6x = 4(2)^3 + 6(2) = 32 + 12 = 44$$

As gradient is not near to zero, calculating step length.

$$\begin{aligned}\Delta x &= -0.01 * 44 \\ &= -0.44\end{aligned}$$

$$\text{update } x = 2 - 0.44 = 1.56$$

Iteration-2:-

$$= 4(1.5)^2 + 6(1.5)$$

$$= 13.5 + 9$$

$$= 22.5$$

$$\Delta x = -0.01 * 22.5 = -0.225$$

$$\text{update } x = 1.5 - 0.225 = 1.275$$