ASSIGNMENT – 2a

Find the global minimum point and value for the function $f(x) = x^4 + 3x^2+10$

- Do manual calculations for two iterations **Iteration**

1:

Let x = 1 and Ƞ = 0.01

Find gradient at x =1 i.e., $df(x)/dx |x=1 = 4 (1)^3 + 6(1) = 10.$

Δ x = -0.01*10 = -0.1

Update x value as x = 1-0.1 = 0.9 Iteration

2:

Find gradient at x =0.9 i.e., $df(x)/dx |x=0.9 = 4 (.9)^3 + 6(.9) = 8.316$

Δ x = -0.01*8.316 = -.08316

Update x value as x = 0.9-0.08316 = 0.816

This procedure repeats until gradient is near to zero.