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 = 2 and Ƞ = 0.01

Find gradient at x =2 i.e., $df(x)/dx\ |x=2 = 4\ (2)^3 + 6(2) = 32+12 = 44$

Δ x = -0.01*44 = -0.44

Update x value as x = 2-0.44 = 1.56

Iteration 2:

Find gradient at x =1.56 i.e., $df(x)/dx\ |x=2 = 4\ (1.56)^3 + 6(1.56) = 15.18+9.36 = 24.54$

Δ x = -0.01*24.54 = -0.2454

Update x value as x = 1.56-0.2454 = 1.31

This procedure repeats until gradient is near to zero.