ASSIGNMENT - 2

Iteration - 1

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

let $x = 2$ & $\alpha = 0.01$

$4x^3 + 6x = 4(2)^3 + 6(2)$

$= 44$

Since gradient is not zero,

Calculating step length Δx

$\Delta x = -0.01 * 44$

$= -0.44$

update x $(x + \Delta x)$

$x = 2 - 0.44 = 1.56$

Iteration 2

$= 4(1.5)^3 + 6(1.5)$

$= 13.5 + 9 = 22.5$

$\Delta x = -0.01 * 22.5$

$= -0.225$

update x

$x = 1.5 - 0.225$

$= 1.275$