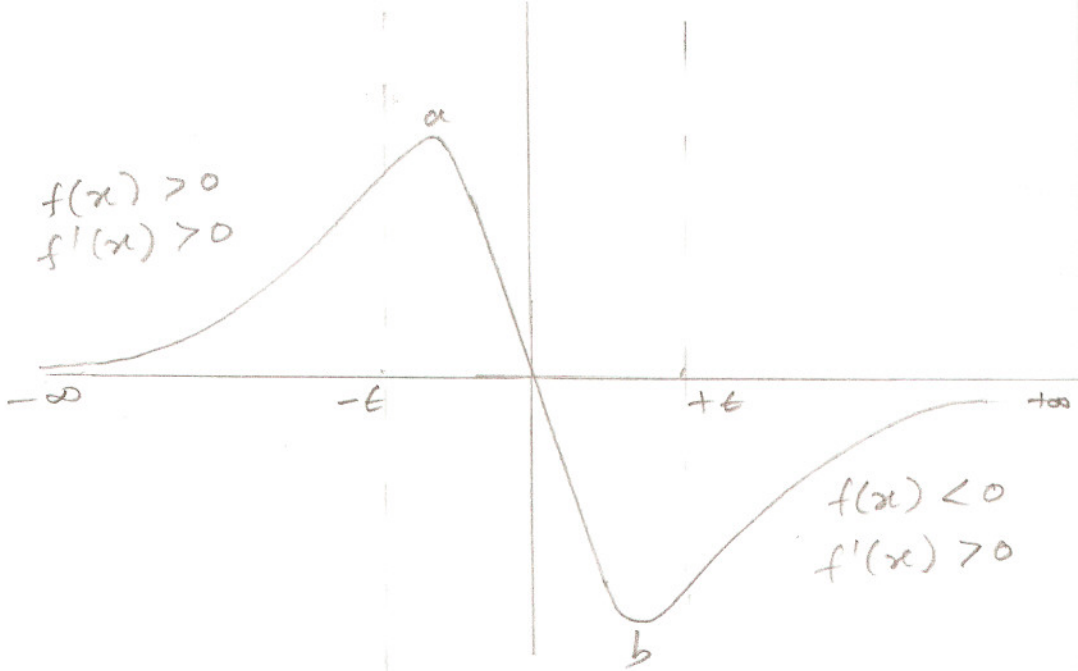
Part IV

Q.4.

Midterm-I solution.



So clearly the solution will converge if we choose x_0 (initial value) between $-\epsilon$ and $+\epsilon$. Infact the initial value has to be between a and b ~~a~~ in this graph.

The solution will not converge if you choose $x_0 < -\epsilon$ or $x_0 > +\epsilon$.

Note that the function is continuous and differentiable ~~from~~ in $(-\infty, +\infty)$. So it asymptotes with the x axis.

Another possible solution is: