

Méthode de Newton-Raphson - Organigramme & programme

Écrit par Administrator
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```
clear
clc

while %t

    disp("Input endpoints that contain the root function x*")
    deff('F=f(x)', 'F=-cos(x)') // define function g(x)
    deff('dF=df(x)', 'dF=-sin(x)+1') // define function f(x)
    a=input("First endpoint of the interval [a,b]!?")
    b=input("Second endpoint of the interval [a,b]!?")

    if f(a)*f(b)> 0 then
        disp("Please check the endpoints a or b that verify f(a)*f(b)<0")
    end

    x=input("Initial value iteration of Newton-Raphson point!?")
    n=1 // start counter
    while abs(f(x))>%eps
        x=x-f(x)/df(x)
        n=n+1
    end

    disp("x = "+string(x)) // display x results (root)
    r=x
    disp("f("+string(x)+" = "+string(f(x))) // display f(x) results
    disp("n = "+string(n)) // display iteration number
    x=-6:0.01:6, fp=f(x), dp=df(x),
    plot(x,0,x,fp, "r", x, dp) // plot fuctions curves.

    cont=input("Do you want to continue!? Y or N !?", "string")
    if cont=="N" then
        break
    end

end

end
```