Соколовський Євгеній Юрійович 26 варіант 8 група

1.

import numpy as np

import math

from scipy.misc import derivative

def f(x):

return 3\*pow(x,4)+4\*pow(x,3)-12\*pow(x,2)-1

a = 1

b = 2

eps = 0.001 #точність

def nuton(a,b,eps):

df2 = derivative(f, b, n = 2)

if (f(b)\*df2>0):

xi = b

else:

xi = a

df = derivative(f,xi, n= 1)

xi\_1 = xi - f(xi)/df

while (abs(xi\_1 - xi)>eps): #accuracy check

xi = xi\_1

xi\_1 = xi - f(xi)/df

return print ('Solving the equation by Newton\*s method x = ', xi\_1)

nuton (a,b,eps)Изображение выглядит как текст

Автоматически созданное описание

2.

import numpy as np

import math

from scipy.misc import derivative

def f(x):

return 3\*pow(x,4)+4\*pow(x,3)-12\*pow(x,2)-1

def komb(a,b,eps):

if (derivative(f, a, n = 1)\*derivative(f, a, n = 2)>0):

a0 = a

b0 = b

else:

a0 = b

b0 = a

ai = a0

bi = b0

while abs(ai-bi)>eps:

ai\_1 = ai -f(ai)\*(bi - ai)/(f(bi) - f(ai))

bi\_1 = bi - f(bi)/derivative(f,bi, n= 1)

ai = ai\_1

bi = bi\_1

x = (ai\_1+bi\_1)/2

return print('Solving the equation by the combined method x = ', x)

komb(1,2,0.0001)Изображение выглядит как текст

Автоматически созданное описание