Додавання

import numpy

A= numpy.matrix([[1,2],[4,-1]])

B = numpy.matrix([[2,-3], [-4, 1]])

print('A+B=',A+B)

Степінь

import numpy

A= numpy.matrix([[-1,2],[0,1]])

print('A=',A\*A)

Добуток

import numpy

A= numpy.matrix([[3,5],[6,-1]])

B = numpy.matrix([[2, 1],[-3, 2]])

print('A\*B=',A\*B)

Визначники

import numpy

al = numpy.matrix ('2, 3, 4; 1, 0, 6; 7, 8, 9')

print('al=',al)

det\_al = numpy.linalg.det(al)

print ('det\_AL=',det\_al)

Визначники 2

import numpy

al = numpy.matrix ('2, 3, 4, 1; 1, 2, 3, 4; 3, 4, 1, 2; 4, 1, 2, 3')

print('al=',al)

det\_al = numpy.linalg.det(al)

print ('det\_AL=',det\_al)

Обернена матриця

import numpy

al = numpy.matrix ([[1, 2, -3], [0, 1, 2],[0, 0, 1]])

print('al=',numpy.linalg.inv(al))

Ранг матриці

import numpy

al = numpy.matrix ([[1, 2, 3, 4], [3, -1, 2, 5],[1, 2, 3, 4],[1, 3, 4, 5]])

print('al=',numpy.linalg.matrix\_rank(al))

Крамер

import numpy

al = numpy.matrix ([[14, 4, 6], [5, -3, 2],[10, -11, 5]])

det\_al = numpy.linalg.det(al)

al1 = numpy.matrix ([[30, 4, 6], [15, -3, 2], [36, -11, 5]])

det\_al1 = numpy.linalg.det(al1)

al2 = numpy.matrix ([[14, 30, 6], [5, 15, 2], [10, 36, 5]])

det\_al2 = numpy.linalg.det(al2)

al3 = numpy.matrix ([[14, 4, 30], [5, 3, 15], [10, -11, 36]])

det\_al3 = numpy.linalg.det(al3)

b = numpy.matrix ([[30], [15], [36]])

x = det\_al1/det\_al

y = det\_al2/det\_al

z = det\_al3/det\_al

x1 = numpy.linalg.solve(al,b)

print('al=', det\_al, '\n',

'al1=',det\_al1, '\n',

'al2=', det\_al2, '\n',

'al3=', det\_al3, '\n',x, '\n', y, '\n', z, '\n', b, '\n', x1)

Матрична система

import numpy

ar = numpy.matrix ([[1, -2, 3], [4, 2, -3],[3, -3, 5]])

ar1 = numpy.matrix([[-5], [0], [-9]])

f9 = numpy.linalg.inv(ar)

res = f9 \*ar1

print('res=', res, '\n' )

print(numpy.linalg.solve(ar,ar1))

Посилання на Гіт Хаб

https://github.com/Terstock/Labs/upload/main