from numpy import linalg

import numpy as np

print('Task 1(A-B):\n',)

a = np-matrix([[1,2],[4,1]])

b = np.matrix([[2,-3],[-4,1]])

sol = (a\*b)-(b\*a)

print('Answer 1:\n', sol)

print('Task 2(A^2)(\n')

c = np.matrix([[-1,2],[0,1]])

print('Answer 2:\n',c\*\*2)

print('Task 3 (A^2)\n')

d = np.matrix([[3,5],[6,-1]])

i = np.matrix([[6,1],[-3,2]])

print ('Answer 3:\n',d\*i)

print('Task 4\n')

f = np.linalg.det([[2,3,4],[1,0,6],[7,8,9]])

print('Answer 4:\n',f)

print('Task 5\n')

e = np.linalg.det([[1,2,3,4],[-2,1,-4,3],[3.-4.-1,2],[4,3,-2,-1]])

print('Answer 5:\n',e)

print('Task 6\n')

j = np.linalg-inv([[1,2,-3],[0.1,2],[0,0,1]])

print('Answer 6:\n',j)

print("Task 7\n")

k = np.linalg.matrix\_rank([[1,2,3,4],[3,-1,2,5],[1.2,3,4],[1,3,4,5]])

print('Answer 7:\n',k)

print('Task 8, method kramer',)

del0 = np.linalg.det([[14,4,6],[5,-3,2],[10,-11,5]])

del1 = np.linalg.det([[30,4,6],[15,-3,2],[36,-11,5]])

del2 = np.linalg.det([[14,30,6],[5,15,2],[10,36,5]])

del3 = np.linalg.det([[14,4,30],[5,-3,15],[10,-11,36]])

x1 = del1/del0

x2 = del2/del0

x3 = del3/del0

print("x=",x1,"y=",y1,"z=",z1)