Compte rendu maths TP7 Sami Hadjeb

1)

import numpy

A = numpy.array([ [1, 5, 3], [6, 1, -8], [4, 4, 9] ])

B = numpy.array([ [6, -7, 1], [9, -1, 3], [7, 6, 3] ])

C = A.dot(B)

print("A: ", A)

print("B: ", B)

print("AB: ", C)

2)

def multiplication(A, B):

C = []

if len(A[0]) != len(B):

print("impossible")

return False

for i in range(len(A)):

x = []

for j in range(len(B[0])):

temp = 0

for k in range(len(A[0])):

temp = temp + A[i][k] \* B[k][j]

x.append(temp)

C.append(x)

return C

print(multiplication( [ [1, 5, 3], [6, 1, -8], [4, 4, 9] ], [ [6, -7, 1], [9, -1, 3]] ))

3)

def eststochastique(P):

for i in range(len(P)):

x = 0

for j in range(len(P[i])):

x = x + P[i][j]

if (x != 1):

return False

return True

def estbistochastique(P):

if not eststochastique(P):

return False

for i in range(len(P[0])):

x = 0

for j in range(len(P)):

x += P[i][j]

if (x != 1):

return False

return True

def vecteurstable(G, h):

return True;

print(eststochastique( [ [0, 0, 1], [0, 1, 0], [1, 0, 0] ]))

print(estbistochastique( [ [0, 0, 1], [0, 1, 0], [1, 0, 0] ]))

4)

import numpy

def transposer(A):

B = []

if ((len(A[0]) != 2 ) or ( len(A) != 2 )):

print("impossible")

return False

B = numpy.transpose(A)

return B

print(transposer( [[0, 1], [1, 0] ]))