

```

import math
from math import log
import numpy as np
import random

alpha = 0.5
print('max(10,25) = ',max(10,25))
print('max([3,2,8,1,2,3]) = ',np.max([3,2,8,1,2,3]))
liste = []
print('test avec des petits entiers')
for x in range(1,100):
    for y in range(1,x):
        liste.append(alpha*log(x)+(1-alpha)*log(y)-alpha*log(alpha)-(1-alpha)*log(1-alpha))
        #print('liste = ',liste)
        print('x = ',x,' y = ',y,' --> log(x+y) = ',log(x+y))
        print('le max de la liste est : ',np.max(liste))

print('\ntest avec des nombres aleatoires')
liste = []
for k in range(10):
    x = random.random()
    y = random.random()
    liste.append(alpha*log(x)+(1-alpha)*log(y)-alpha*log(alpha)-(1-alpha)*log(1-alpha))
    #print('liste = ',liste)
    print('x = ',x,' y = ',y,' --> log(x+y) = ',log(x+y))
    print('le max de la liste est : ',np.max(liste))

print('\nx = 101.5, y = 103.5')
x = 101.5
y = 103.5
print('formule entropie = ',alpha*log(x)+(1-alpha)*log(y)-alpha*log(alpha)-(1-alpha)*log(1-alpha))
print('log de la somme = ',log(x+y))

print('\nx = 10001.5, y = 10003.5')
x = 10001.5
y = 10003.5
print('formule entropie = ',alpha*log(x)+(1-alpha)*log(y)-alpha*log(alpha)-(1-alpha)*log(1-alpha))
print('log de la somme = ',log(x+y))

print('\nx = 1000001.5, y = 1000003.5')
x = 1000001.5
y = 1000003.5
print('formule entropie = ',alpha*log(x)+(1-alpha)*log(y)-alpha*log(alpha)-(1-alpha)*log(1-alpha))
print('log de la somme = ',log(x+y))

```