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import math
from math import sqrt

beaucoup = 1000

def psi(x):
    somme = 0.0
    for n in range(1, beaucoup):
        somme = somme + math.exp(- float(n)**2 * math.pi * x)
    return somme

print("psi de Riemann de 1 a 100")
for x in range(1,1000):
    res1 = psi(float(x))
    print('')
    print("x "+str(x)+" psi(x) "+str(res1))
    res1 = 2.0*res1+1.0
    print("x "+str(x)+" 2psi(x)+1 "+str(res1))
    res2 = 2.0*psi(1.0/float(x))+1.0
    print(" 2psi(1/x)+1 "+str(res2))
    res2 = res2/sqrt(x)
    print(" x^(-1/2)*(2psi(1/x)+1) "+str(res2))

```