```
import math
from math import log,sqrt,exp

def pgcd(m,n):
    while m != 0:
        r = n % m
        n = m
        m = r
    return(n)

def ppcm(m,n):
    return(m*n/pgcd(m,n))

def ppcmetendu(x):
    ppcme = 1
    for k in range(2,x+1):
        ppcme = ppcm(ppcme,k)
        #print(k,'a pour ppcme  --> ',ppcme)
    return(ppcme)

for n in range(1,218):
    res1 = ppcmetendu(n)
    res2 = log(ppcmetendu(n))
    print(n,' :::: ppcm(1,..,n) = ',res1,'   exp(n) = ',exp(n),'  A =
log(ppcm(1,..,n) =  ',res2)
    print(n,' :::: abs(A-x) = ',abs(res2-n),'  2*sqrt(n)*(log(n)**2) =
',2*sqrt(n)*(log(n)**2))
    print('')
```