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import math
from math import sqrt
import numpy as np

print('Matrices de Redheffer ')
for n in range(1001):
#for n in range(12,13):
    M = np.zeros((n,n),dtype='int')
    for j in range(n):
        M[0,j] = 1;
        M[j,0] = 1
    for i in range(1,n):
        for j in range(1,n):
            if (j+1) % (i+1) == 0:
                M[i,j] = 1
#écriture matrice 12 x 12
if n == 12:
    for i in range(n):
        for j in range(n):
            print(M[i,j], ' ',end='')
            print('')
        print('')
print(n, ' --> det = ', np.linalg.det(M))

```