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import numpy as np
tab = []
for k in range(1,98):
    restes = []
    for p in [2,3,5,7]:
        restes.append(k%p)
    restes.append(1)
    #print(restes)
    tab.append(restes)
print(tab)
print(tab[19-1])

M1 = [[0,0,0,0,0],[0,1,0,0,0],[0,0,1,0,0],[0,0,0,1,0],[0,0,0,0,1]]
M2 = [[1,0,0,0,0],[0,0,0,0,0],[0,0,1,0,0],[0,0,0,1,0],[0,0,0,0,1]]
M3 = [[1,0,0,0,0],[0,1,0,0,0],[0,0,0,0,0],[0,0,0,1,0],[0,0,0,0,1]]
M4 = [[1,0,0,0,0],[0,1,0,0,0],[0,0,1,0,0],[0,0,0,0,0],[0,0,0,0,1]]
M5 = [[1,0,0,0,0],[0,0,0,0,2],[0,0,1,0,0],[0,0,0,1,0],[0,0,0,0,1]]
M6 = [[1,0,0,0,0],[0,1,0,0,0],[0,0,0,0,3],[0,0,0,1,0],[0,0,0,0,1]]

for k in range(1,50):
    v = tab[k-1]
    print('')
    print(k, 'matrice', v)
    print('M1')
    fichier.write('M1')
    print(np.dot(M1,v))
    print('M2')
    fichier.write('M2')
    print(np.dot(M2,v))
    print('M3')
    fichier.write('M3')
    print(np.dot(M3,v))
    print('M4')
    fichier.write('M4')
    print(np.dot(M4,v))
    print('M5')
    fichier.write('M5')
    print(np.dot(M5,v))
    print('M6')
    fichier.write('M6')
    print(np.dot(M6,v))

from numpy.linalg import eig

D,V = eig(M5)
print('valeurs propres M5')
print(D)
print('vecteurs propres M5')
print(V)

D,V = eig(M6)
print('valeurs propres M6')
print(D)
print('vecteurs propres M6')
print(V)

```