

Aide-mémoire (bibliothèques Python)

NumPy

```
import numpy as np

np.linspace(start, stop, num=50, endpoint=True, retstep=False)
np.logspace(start, stop, num=50, endpoint=True)
np.arange(start, stop, step)
np.zeros(shape, dtype=float)
np.ones(shape, dtype=None)
np.empty(shape, dtype=float)
np.array(object, dtype=None)
np.empty_like(a)
np.zeros_like(a)
np.ones_like(a)
ndarray.ndim
ndarray.shape
ndarray.dtype
np.eye(N)
np.reshape(a, newshape)
np.dot(a, b)
a.T
a.transpose()
np.linalg.det(a)
np.linalg.inv(a)
np.linalg.eig(a)
np.random.rand(N)
np.meshgrid(x,y,indexing='ij')
np.gradient(f)
np.loadtxt(fname, comments='#', skiprows=0, usecols=None, unpack=False)
np.savetxt(fname, X, fmt='%0.18e', delimiter=' ', newline='\n', header='', footer='', comments='#')
```

SciPy

```
from scipy import constants
from scipy import optimize
from scipy import integrate
constants.c
constants.m_e
constants.g
constants.physical constants["speed of light in vacuum"]
constants.physical constants["electron mass"]
constants.physical constants["standard acceleration of gravity"]
optimize.bisect(f, a, b, xtol=2e-12, maxiter=100, full_output=False)
optimize.newton(func, x0, fprime=None, tol=1.48e-08, maxiter=50, fprime2=None, full_output=False)
optimize.fsolve(func, x0, xtol=1.49012e-08)
integrate.quad(f, a, b)
integrate.odeint(f, y0, t, tfirst=True)
```

Matplotlib

```
import matplotlib.pyplot as plt
import matplotlib.image as mpimg

plt.figure(num=None, figsize=None)
plt.plot(x, y)
plt.errorbar(x, y, yerr=None, xerr=None)
plt.scatter(x, y)
plt.quiver(x,y,u,v)
plt.fill_between(x, y1, y2)
plt.clabel(cs)
plt.axis('equal')
plt.axis('scaled')
plt.grid()
plt.xlabel(xlabel)
plt.ylabel(ylabel)
plt.legend()
plt.title(label)
plt.savefig(fname)
plt.imshow(x)
plt.show()
mpimg.imread(fname)
mpimg.imsave(fname)
```