Codes du TP12

```
import matplotlib.pyplot as plt
import numpy as np

#Exercice 3.1

def f1(x):
    return np.sqrt(1-x**2)

x1=np.arange(0,1,0.0001)

plt.plot(x1,f1(x1))

def SommedeRiemann1(n):
    I=0
    for k in range(1,n+1):
        I=I+(1/n)*f1(k/n)
    return I

def vitesse1():
    n=1
    while np.abs(SommedeRiemann1(n)-np.pi/4)>10**-3:
        n=n+1
    return n

#Exercice 3.2

def f2(x):
    return 1/(2*x+1)**2

def f3(x):
    return 1/(x*np.log(x))

def f4(x):
    return 1/(1+x**2)

def SommedeRiemann(n,f,a,b):
    I=0
    for k in range(1,n+1):
        I=I+((b-a)/n)*f(a+k*((b-a)/n))
    return I

#Exercice 4.1

def g(x):
    return (1/np.sqrt(2*np.pi))*np.exp(-x**2/2)

x2=np.arange(-5,5,0.0001)
plt.plot(x2,g(x2))
```

```
def SommedeRiemann2(n,a,b):
    I=0
    for k in range(1,n+1):
        I=I+((b-a)/n)*g(a+k*(b-a)/n)
    return I
```