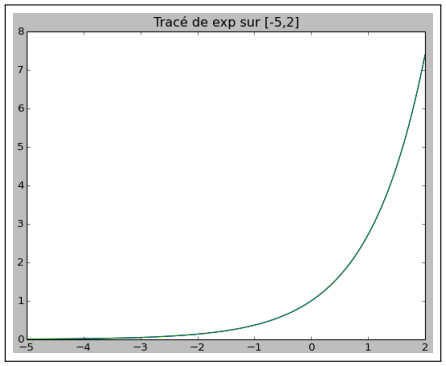
```
# Importation des Modules :
import numpy as np
import matplotlib.pyplot as plt


# EXERCICE 1 :
# 1.1)
def suite(n):
    T = np.arange(0,n+1)
    return 1/(1+T**2)**0.5

# 1.2)
T = np.arange(1,101)
somme = sum((2*T+1)**3 / T)
print('Ex. 2.b : ', somme)
```

Résultat obtenu :

$$\sum_{k=1}^{100} \frac{(2.k+1)^3}{k} \approx \boxed{2768005.18738}$$

```
# EXERCICE 2 :
X = np.linspace(-5,2,1000)
Y = np.exp(X)
plt.figure('Exercice 3')
plt.plot(X,Y)
plt.title("Tracé de exp sur [-5,2]")
plt.show()
```




```
# EXERCICE 3 :
from random import random

# 3.1)
def simulBernoulli(p):
    rnd = random()
    if rnd <= p:
        return 1
    else:
        return 0

# 3.2)
N = 1000
def loiBernouilli(p,k):
    n = 0
    for _ in range(N):
        if simulBernoulli(p) == k:
            n += 1
    return n/1000

# 3.3)
p = 1/3
loi = [loiBernoulli(p,0), loiBernoulli(p,1)]
plt.bar([-0.4, 1-0.4], loi)
plt.grid()
plt.axis([-1,2,0,1])
plt.show()
```