

Exercice 1

```
1) a)
s=0
n=int(input('Donnez la valeur de n : '))
for i in range(1,n+1):
    s=s+1/i**2
print(s)
b) on trouve s = 1,6349839
c) import numpy as np
n=int(input('Donnez la valeur de n : '))
L=[1/i**2 for i in range(1,n+1)]
s=np.sum(L)
print(s)
2) from math import pi
s=0;n=0
while abs(s-pi**2/6)>10**(-4):
    n=n+1
    s=s+1/n**2
print(n)
On trouve n = 10000
```

Exercice 2

```
from math import log
T=0;n=0
while abs(T-log(2))>10**(-3):
    n=n+1
    T=T+(-1)**(n+1)/n
print(n)
On trouve n = 500
```

Exercice 3

```
p=1
for k in range(1,101):
    p=p*(1+1/k**2)
print(p)
On trouve p = 3.6396823
```

Ou :

```
from numpy import prod
L=[1+1/k**2 for k in range(1,101)]
p=prod(L)
print(p)
```

Exercice 4

Rappel : $\forall n \in \mathbb{N}, (n + 1)! = (n + 1) \times n!$

```
n=1;p=1
```

```
while p<=10**6:
```

```
    n=n+1
```

```
    p=p*n
```

```
print(n)
```

On trouve $n = 10$

Exercice 5

```
from random import randint
```

```
nbrecaché=randint(1,100)
```

```
test=int(input('Quel est le nombre caché ? '))
```

```
essai=1;
```

```
while test!=nbrecaché:
```

```
    if test>nbrecaché:
```

```
        print('Trop grand !')
```

```
    else:
```

```
        print('Trop petit !')
```

```
    test=int(input('Quel est le nombre caché ? '))
```

```
    essai=essai+1
```

```
print('Gagné !')
```

```
print('En ',essai,' essais')
```