

## DS d'informatique N°1 bis – Corrigé

### Exercice 1 : STATISTIQUES SUR LES LISTES

1.

```
def minimum(a):  
    mini = a[0]  
    for v in a:  
        if v < mini:  
            mini = v  
    return mini
```

2.

```
def maximum(a):  
    maxi = a[0]  
    for v in a :  
        if v > maxi:  
            maxi = v  
    return maxi
```

3.

```
def moyenne(a):  
    S=0  
    for v in a:  
        S += v  
    return s/len(a)
```

4.

```
from math import *  
def ecartType(L):  
    m = moyenne(L)  
    S = 0  
    for v in L:  
        S += (v-m)^2  
    return sqrt(S/len(L))
```

### Exercice 2 : CALCULER UNE SOMME

```
def somme(n):  
    s=0  
    for i in range(n):  
        s+=(-1)**i/(2*(i+1)-1)  
    return 4*s
```

### Exercice 3 : SUITE DE SYRACUSE

1.

```
def f(n):  
    if n%2 == 0:  
        return n//2  
    else:  
        return 3*n+1
```

2.

```
def syracuse(u0, n):  
    un = u0  
    for i in range(n):  
        un = f(un)  
    return un
```

3.  $u_0 = 17, u_1 = 52, u_2 = 26, u_3 = 13, u_4 = 40, u_5 = 20, u_6 = 10, u_7 = 5, u_8 = 16, u_9 = 8, u_{10} = 4, u_{11} = 2, u_{12} = 1, u_{13} = 4, \dots$

4.

```
def vol(u0):  
    un=u0  
    n=0  
    while un!=1:  
        n = n+1  
        un = f(un)  
    return n
```