

Chapitre 4 - TP1**BOUCLES FOR - CORRIGÉ****Exercice 1**

1. $u_1 = 1$, $u_2 = \frac{1}{4} = 0,25$ et $u_3 = \frac{1}{9} \approx 0,11$

```
for k = 1:10
    disp(1/k^2)
end
```

2. $u_1 = u_0 + 2^1 = 4$, $u_2 = u_1 + 2^2 = 8$ et $u_3 = u_2 + 2^3 = 16$

```
u = 2
for k = 1:10
    u = u + 2^k
    disp(u)
end
```

ou

```
u = 2
for k = 0:9
    u = u + 2^(k+1)
    disp(u)
end
```

Exercice 2

```
n = input('Saisir un entier n:')
H = 0
for k = 1:n
    H = H + 1/k
end
disp(H, 'Hn =')

P = 1
for i = 2: 20
    P = P * log(i)
end
disp(P, 'P =')
```

Exercice 3

```
compteur = 0
for k = 1:150
    d = floor(6*rand())+1
    if d==2 | d==4 | d==6 then
        compteur = compteur + 1
    end
end
disp(compteur)
```

Exercice 4 Suite de Fibonacci

```
n = input('n=')
u = 1
v = 1
for k = 1:n
    w = u+v
    u = v // uk
    v = w // u(k+1)
end
disp(u) // Question 1
disp(v/u) // Question 2
```

Exercice 5 L'échiquier de Sissa

La case numéro k contient 2^{k-1} grains de riz.

```
somme = 0
for k = 1:64
    somme = somme + 2^(k-1)
end
disp(somme, 'Total:')

// Masse en grammes
MasseGr = somme*0.04
// Masse en tonnes. 1tonne = 1000kg = 10^6 gr
MasseTonnes = MasseGr/(10^6)
disp(MasseTonnes)

ProdParAn = 782*10^6 // en tonnes
Duree = MasseTonnes/ProdParAn
disp(Duree)
```