Correction

```python
# 1)
impairs = [k for k in range(101) if k%2==1]

# 2)
def crible(liste):
    res = [l for l in liste if '7' in str(l)]
    return res

# 3)
print(len(crible(impairs)))

# 4)
def D(n):
    if n==0:
        return 1
    res = 1
    for k in range(n):
        res = 2*(2*k+1)*res/(k+2)
    return res


# 5)
def C(n):
    res=[1]
    if n==0:
        return res
    res.append(1)
    for i in range(n-1):
        res.append(sum([res[k]*res[-k-1] for k in range(len(res))]))
    return res

# 6)
def descente(n):
    i=0
    while n>3:
        if n%2==0:
            n = n//2
        else :
            n = 3*(n+1)//2
        i=i+1
    return n,i

# 7)
print(descente(17))

# 8)
```

```python
def M(n):
    print('*'+(2*n-1)*' '+'*')
    for k in range(n-1):
        print('*'+k*' '+'*'+(2*n-3-2*k)*' '+'*'+k*' '+'*')
    print('*'+(n-1)*' '+'*'+(n-1)*' '+'*')
    for k in range(n):
        print('*'+(2*n-1)*' '+'*')

# 9)
M(4)

# 10)
def separe(liste):
    a,b = 0,0
    m=min(liste)
    M=max(liste)
    mil = (m+M)/2
    for k in liste:
        if k < mil:
            a=a+1
        else:
            b=b+1
    return (a,b)

# 11)
import random as rd
print(separe([rd.random()*898+1 for k in range(100)]))

# 12)
print(''.join([chr(ord(k)-2) for k in 'Dtcxq"#"Xqwu"cxg|"vqwvg"oqp"guvkog"#']))
# ce qui affiche le message :
# Bravo ! Vous avez toute mon estime !
```

Correction

```python
# 1)
pairs = [k for k in range(1,102) if k%2==0]

# 2)
def crible(liste):
    res = [l for l in liste if '0' in str(l)]
    return res

# 3)
print(len(crible(pairs)))


# 4)
def K(n):
    if n==0:
        return 1
    res = 1
    for k in range(n):
        res = -(k+1)*res+k**2
    return res


# 5)
def C(n):
    res=[1]
    if n==0:
        return res
    res.append(1)
    for i in range(n-1):
        res.append(sum([(-1)**k*res[k]*res[-k-1] for k in range(len(res))]))
    return res

# 6)
def syr(n):
    i=0
    while n>=2:
        if n%2==0:
            n = n//2
        else :
            n = (3*n+1)//2
        i=i+1
    return n,i

# 7)
print(syr(27))
```

```python
# 8)
def W(n):
    for k in range(n):
        print('*'+(2*n-1)*' '+'*')
    print('*'+(n-1)*' '+'*'+(n-1)*' '+'*')
    for k in range(n-1):
        print('*'+(n-k-2)*' '+'*'+(1+2*k)*' '+'*'+(n-k-2)*' '+'*')
    print('*'+(2*n-1)*' '+'*')

# 9)
W(4)

# 10)
def separe(liste):
    a,b = 0,0
    for k in liste:
        if k%2==1:
            b=b+1
        else:
            a=a+1
    return (a,b)

# 11)
import random as rd
print(separe([rd.randrange(0,1001) for k in range(100)]))

# 12)
print(''.join([chr(ord(k)-3) for k in 'Eudyr#$#Yrxv#dyh}#wrxwh#prq#hvwlph#$']))
# ce qui affiche le message :
# Bravo ! Vous avez toute mon estime !
```