

Ejercicio 1

- a) 25252
- b) 11110111
- c) 3,0
- d) 0 10000 11000000000

Ejercicio 2

a)

```
function x=iguales(v,w)
n = length(v);
m = length(w);
if n==0 && m==0
    x = 1;
elseif n==0 || m==0
    x = 0;
elseif v(1)==w(1)
    x = iguales(v(2:n),w(2:m));
else
    x = 0;
end
```

b)

```
function x=prefijo(v,w)
n = length(v);
m = length(w);
if n==0
    x = 1;
elseif m==0
    x = 0;
elseif v(1)==w(1)
    x = prefijo(v(2:n),w(2:m));
else
    x = 0;
end
```

c)

```
function x = cantOcuurrenciasDex(v,w)
n = length(v);
m = length(w);
if m==0
    x = 0;
elseif n==0
    x = 0;
else
    x = prefijo(w,v) + cantOcuurrenciasDex(v(2:length(v)),w);
end
```

Ejercicio 3

a)

```
function R = sumaBinariaIter (V,W)
n = length(V);
m = length(W);
Vn = V;
Wn = W;
if n > m
    p = n-m;
    Wn = zeros(1,p);
    Wn = [Wn W];
    s = n;
else
    p = m-n;
    Vn = zeros(1,p);
    Vn = [Vn V];
    s = m;
end
carry=0;
for i=s:-1:1
    R(i) = mod(Vn(i)+Wn(i)+carry,2);
    carry= floor((Vn(i)+Wn(i)+carry)/2) ;
end
if carry==1
    R=[1,R];
end
```

b)

```
function [posx, posy] = posicion (M,x)
[m, n] = size(M);
parar = 0;
i = 1;
suma = 0;
while i <= m && ~parar
    j = 1;
    while j <= n && ~parar
        suma = suma + M(i,j);
        if suma > x
            parar = 1;
        else
            j = j + 1;
        end
    end
    if ~parar
        i = i + 1;
    end
end

if i <= m
    posx = i;
    posy = j;
else
    posx = -1;
    posy = -1;
end
```

Ejercicio 4

a)

```
function [X,Y,R] = sumaDisp(X,Y,R,fil,col,val)
if val~=0
    n = length(X);
    i = 1;
    parar = 0;
    while i <= n && ~parar
        if X(i) == fil && Y(i) == col
            parar = 1;
            if R(i)+val ~= 0
                R(i) = R(i) + val;
            else
                X = [X(1:i-1), X(i+1:n)];
                Y = [Y(1:i-1), Y(i+1:n)];
                R = [R(1:i-1), R(i+1:n)];
            end
        end
        i = i+1;
    end
    if ~parar
        X = [X, fil];
        Y = [Y, col];
        R = [R, val];
    end
end
```

b)

```
function [Xr,Yr,Rr] = sumaDispRec(X,Y,R,fil,col,val)
if val==0
    Xr = X;
    Yr = Y;
    Rr = R;
else
    n = length(X);
    if n == 0
        Xr = [fil];
        Yr = [col];
        Rr = [val];
    elseif X(n) == fil && Y(n) == col
        if R(n)+val ~= 0
            Xr = X;
            Yr = Y;
            Rr = [R(1:n-1),R(n)+val];
        else
            Xr = X(1:n-1);
            Yr = Y(1:n-1);
            Rr = R(1:n-1);
        end
    else
        [Xr,Yr,Rr] = sumaDispRec(X(1:n-1),Y(1:n-1),R(1:n-1),fil,col,val);
        Xr = [Xr,X(n)];
        Yr = [Yr,Y(n)];
        Rr = [Rr,R(n)];
    end
end
```