

Exercise 1: Consider the following program

```

int f(int n){
if (n<=0)
n = 1-n;
if (n%2==0)
n = n/2;
else
n = 3*n+1;
return n;}

```

1. Draw the control flow graph of this program.
2. Provide the path expressions.

Exercise 2: Look at the following program:

```

lire(x)
lire(y)
z = 0
signe = 1
si x < 0 alors
    signe = -1
    x = - x
fini
si y < 0 alors
    signe = - signe
    y = - y
fini
tant que x >= y faire
    x = x - y
    z = z + 1
fin
z = signe * z

```

- a) Draw the control flow graph associated with this program, numbering its nodes.
- b) What sequence of nodes must be followed to satisfy the **statement coverage criterion**?
 - Provide a minimal test set that satisfies this criterion.
- c) What sequence of nodes must be followed to satisfy the **branch coverage criterion**?
 - Provide a minimal test set that satisfies this criterion.
- d) The **i-path coverage** criterion is defined as the criterion that ensures all possible paths are covered by repeating each loop from 0 to i times.
 - What sequence of nodes must be followed to satisfy the 1-path coverage criterion?
 - Provide a minimal test set that satisfies this criterion