# 6. Lab ✿6

## ✳ Functions in Matlab ✳

**6**

1. We recall that the Fibonacci sequence is defined by induction by :

$$fib(n+2) = fib(n+1) + fib(n)$$

   where $fib(0) = 0$, $fib(1) = 1$.
   Write a function `y=fibgen(n,B,A)` that calculates the $n^e$ term of the unique sequence $u$ verifying $u(n+2) = u(n+1) + u(n)$ and $u(0) = B$, $u(1) = A$ for any *relative* integer $n$.

2. Create a function `[area,circumference]=surf_circ(radius)` that calculates the area and circumference of any circle from its radius, and displays the calculation results ?.

3. Create a function `[surface]=surf_sort(base,height)` which calculates the surface area of any triangle from its base and height, and which displays the calculation result ?.

4. Create a function `[x1,x2]=QuadraticEq(a,b,c)` that calculates the roots `x1,x2` of a quadratic equation `ax^2+bx+c` ?. Test your function for `a=4,b=2` and `c=-2` ?.

5. Write a program that calculates the area `A = bc` of a rectangle. The values of b and c must be entered by the user. The calculation of the area should be done by a function that takes b and c as input parameters and returns the calculated area value A. Display the result with appropriate text. Run the program for b=2 and

c=3. File name : *Area_ Triangle.m.*