There are two questions on this exam. You have 1:30 hour to complete it. Please do your own work.
Programming languages allowed for this question Java ,Python, Javascript
For java

a.wildcard imports and some specific classes are restricted(java.lang.classLoader)

b.thirdparty libraries input/output operations,spawning threads or processes and changes to the execution environment are not allowed.

For Python

a.Standard libraries are supported except for
bz2,crypt,fcntl,mmap,pwd,pyexpat,select,signal,terminos,thread,time,unicodedata,zipimport,zlib

b.Input/Output operations are not allowed.

1. Consider the following algorithm

Start with a positive number n
if n is even then divide by 2
if n is odd then multiply by 3 and add 1
continue this until n becomes 1

The **Guthrie index** of a positive number n is defined to be how many iterations of the above algorithm it takes before n becomes 1.
For example, the Guthrie index of the number 7 is 16 because the following sequence is 16 numbers long.
22, 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4, 2, 1
It is easy to see that this sequence was generated by the above algorithm. Since 7 is odd multiply
by 3 and add 1 to get 22 which is the first number of the sequence. Since 22 is even, divide by 2 to get 11 which is the second number of the sequence. 11 is odd so multiply by 3 and add 1 to get
34 which is the third number of the sequence and so on.
Write a function named *guthrieIndex* which computes the Guthrie index of its argument.

If input is	return	Sequence
1	0	Number is already 1
2	1	1
3	7	10, 5, 16, 8, 4, 2, 1
4	2	2,1
42	8	21, 64, 32, 16, 8, 4, 2, 1

Programming languages allowed for question 2 are Java and Python

2.Write a function that takes area as an integer input and calculates how many square meters can be made with it.

Forexample if you have an area of 12 meters (input 12),You can make one 3*3 square meters (with the area of 9 meters) That would leave you an area of 3 meters ,so you can turn them into three 1*1 square meters.

Examples

input	return
12	9,1,1,1
16	16
22	16,4,1,1
56	49,4,1,1

The main objective of this this exercise is to determine your code efficiency and problem solving/algorithm skill. If you have any questions feel free to contact me.

GOOD LUCK