RC4-2. i) I want you to write a program that has three inputs: the integer $n$, the integer $l$ and the array of bits which is the key. The output of the program should be an array of bits which is the keystream (it should have length $n * l$). I want your program to include two subroutines.
Subroutine A should take as input two integers x and y. Its output is an array of length x giving the binary representation of y. So SubroutineA(8,185) should output [1,0,1,1,1,0,0,1] Subroutine B should take an array of bits and output the integer whose binary representation is the array. So SubroutineB([1,0,1,1,1,0,0,1]) should output 185 and SubroutineB([1,0,1]) should output 5.

ii) Have your program check your work from RC4-1 by taking the inputs: $n$ =3, $l$ = 11, key=[1,1,0,1,1,1,0,0,0,0,1,1,0,0,1,0,1,1].

iii) Have your program find the keystream for the inputs:
$n = 8$, $l = 28$,
key=[1, 0, 1, 1, 1, 0, 0, 1 , 0, 1, 0, 1, 0, 0, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1].
Use the keystream to find the corresponding ASCII plaintext from the ciphertext: [1, 1, 1, 0, 0, 0, 0, 1, 1, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0, 1, 0, 0, 1, 0, 1, 0, 0, 1, 1, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 1, 1, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 1, 1, 0, 1, 0, 1, 1, 0, 1, 0, 1, 0, 1, 1, 0, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0, 1, 0, 1, 1, 1, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0]