**LEBANESE AMERICAN UNIVERSITY**

**Department of Computer Science and Mathematics**

**CSC 310: Algorithms and Data Structures**

Fall 2013

**Lab V**

**Problem 1**

Julka surprised her teacher at preschool by solving the following riddle:

*Klaudia and Natalia have 10 apples together, but Klaudia has two apples more than Natalia. How many apples does each of the girls have?*

Julka said without thinking: Klaudia has 6 apples and Natalia 4 apples. The teacher tried to check if Julka's answer wasn't accidental and repeated the riddle every time increasing the numbers. Every time Julka answered correctly. The surprised teacher wanted to continue questioning Julka, but with big numbers she couldn't solve the riddle fast enough herself. Help the teacher and write a program which will give her the right answers.

**Input**

Every test case consists of two lines. The first line says how many apples both girls have together. The second line says how many more apples Klaudia has. Both numbers are positive integers. It is known that both girls have no more than **10100** (1 and 100 zeros) apples together. As you can see apples can be very small.

**Output**

For every test case your program should output two numbers. The first number should contain the number of apples belonging to Klaudia. The second number should contain the number of apples belonging to Natalia.

**Sample Input: Sample Output:**

**1** 6 4

10

2

**Problem 2**

Byteman works as a carpenter. He has just received an order for s pine-wood tables. Although he has plenty of pine-wood boards in his workshop, he has just run out of screws. Therefore he needs to walk to the warehouse and bring back some boxes with screws. What is the minimum number of boxes that he needs to bring in order to have enough screws to make the tables?

**Input**

Every test case of standard input contains three integers n, k, and s (1 ≤ n, k, s ≤ 1000) separated with single spaces. They denote the number of boxes with screws in Byteman's warehouse, the number of screws needed to make a table and the number of tables to be made by Byteman, respectively. The second line contains n (not necessarily different) integers ai (1 ≤ ai ≤ 1000) separated with single spaces, such that ai is the number of screws in the ith box in the warehouse.

**Output**

The first and only line of the standard output should contain a single integer - the minimal number of boxes with screws that Byteman needs to bring from his warehouse in order to make the tables.

**Sample Input: Sample Output:**

**1** 3

5 6 3  
3 9 5 7 3

Note: You may assume that Byteman has enough screws in the warehouse to make all tables.