Periodic Ruler

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

Hitagi has a ruler of infinite length. It has a mark on every integer, where the mark on integer i has color c_i. Each color is represented by an integer from 1 to 100.

She noticed that the ruler's color pattern repeats with a period of t. The period t is defined by the **smallest** positive integer that satisfies $c_i = c_{i+t}$ for all integers i.

Hitagi told Koyomi the colors of n marks of her choice. Koyomi wants to find all positive integers that **cannot** be a period of the ruler, regardless of the colors of unchosen marks. Write a program to find all such numbers, and output their count and sum.

Input

The first line contains a single integer n ($1 \leq n \leq 50$).

The following n lines each contain two integers x_i ($|x_i| \leq 10^9$) and a_i ($1 \leq a_i \leq 100$). This indicates that the integer x_i is marked with the color a_i.

If $i \neq j$, then $x_i \neq x_j$.

Output

Output two integers on one line. The first integer is the number of positive integers that cannot be the period of the ruler. The second integer is their sum.

Examples

standard input	standard output
3 -1 1 1 2 2 1	2 3
5 1 1 2 1 3 1 4 1 5 1	4 14
1 1000000000 100	0 0