Party

The day after a giant party everybody wants to know a couple of things - who was at the party and how many people were there? Since parties are usually pretty big, nobody actually knows the correct number of people who were there. Your friend Krešo was on a party last Saturday and he knows how many people there were per 1 m^2.

While reading 5 newspaper articles about that party, you have written down 5 numbers, specifying how many people were present at the party according to each of the articles. You believe Krešo's information and you'd like to know how much each of the articles was wrong.

Input

The first line of input contains two positive integers, N ($1 \leq N \leq 10$), the number of people per m^2, and P ($1 \leq P \leq 1000$), the area of the room the party was held in. The second line of input contains 5 positive integers less than 10^6, the number of people present at the party according to each of the articles.

Output

The first and only line of output must contain 5 numbers, the difference between the number of people written in an article and Krešo's (correct) number.

Sample input	Sample output
1 10 10 10 10 10 10	0 0 0 0 0
5 20 99 101 1000 0 97	-1 1 900 -100 -3