

Problem H. High Powers

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 1024 mebibytes

Given are integers s , t , and u .

Let a , b , and c be distinct complex numbers that satisfy the following conditions:

- $a + b + c = s$,
- $ab + bc + ca = t$,
- $abc = u$.

It is guaranteed that such a , b , and c exist for the given s , t , and u .

Given positive integers n and m , calculate the ratio

$$\frac{a^n(b^m - c^m) + b^n(c^m - a^m) + c^n(a^m - b^m)}{(a - b)(b - c)(c - a)}$$

modulo 998 244 353.

Input

The first line of input contains two integers n and m ($1 \leq n, m \leq 10^{18}$).

The second line contains three integers s , t and u ($0 \leq s, t, u < 998\,244\,353$).

It is guaranteed that the distinct complex numbers a , b , and c from the statement exist for the given s , t , and u .

Output

It can be shown that the answer can be represented as a rational number p/q where p and q are integers, $(p, q) = 1$, $q > 0$ and q is not divisible by 998 244 353.

Print the integer x such that $0 \leq x < 998\,244\,353$ and $qx - p$ is divisible by 998 244 353.

Examples

<i>standard input</i>	<i>standard output</i>
2 3 314 159 265	159
1000000000000000000 800000000000000000 6 11 6	76083766
1000000000000000000 500000000000000000 505459328 165146837 982639180	228155372