P7 :: Compute This!

You have been asked to write a program that computes the value of small polynomial functions. A polynomial is a mathematical expression involving a sum of powers for a variable multiplied by coefficients. A polynomial in one variable with integer coefficients a_i is given by the formula: $a_n x^n + \ldots + a_2 x^2 + a_1 x + a_0$.

This polynomial can be represented by the string "a_nx^n+…+a_2x^2+a_1x+a_0". For example, the polynomial $3x^5 - 5x^2 + 3$ is represented by the string "3x^5-5x^2+3" (where the carat character "^" represents the exponent). Your program will read a polynomial representation of *f(x)* and then print the value of *f(x)* for a given integer *x*. If a coefficient is 1, it is omitted, as with the polynomial $x^5 - x^2 + 9$ which is represented by the string "x^5-x^2+9". If a power is 1, it is omitted, as with the polynomial x-2 represented by the string "x-2".

Input Format

Your program will read two lines from standard input. The first line will contain a string representing a polynomial *f(x)*. The second line will contain an integer *x* such that $-10 \leq x \leq 10$. You can assume that the input is properly formatted and the polynomial powers from left-to-right are in decreasing order. No power appears multiple times but some powers may be missing. Coefficients cannot be zero and are guaranteed to be between -5 and 5 inclusively. Each power value appearing after the "^" character will be a single digit from 2 to 5. The variable '*x*' will always appear in lower case.

Output Format

Your program must write to standard output a single integer on a line by itself that represents the value *f(x)*.

Sample Input and Corresponding Sample Output

Sample Input	Sample Output
3x^5-5x^2+3 2	79
x-2 -5	-7
5x^5-4x^4+3x^3 2	120
x^3-x^2+x+1 9	658
7 2	7
-3x^2+9 3	-18