HackerRank

Integers Come In All Sizes

Integers in Python can be as big as the bytes in your machine's memory. There is no limit in size as there is: $2^{31} - 1$ (c++ int) or $2^{63} - 1$ (C++ long long int).

As we know, the result of a^b grows really fast with increasing b.

Let's do some calculations on very large integers.

Task

Read four numbers, a, b, c, and d, and print the result of $a^b + c^d$.

Input Format

Integers a, b, c, and d are given on four separate lines, respectively.

Constraints

 $\begin{array}{l} 1 \leq a \leq 1000 \\ 1 \leq b \leq 1000 \\ 1 \leq c \leq 1000 \\ 1 \leq d \leq 1000 \end{array}$

Output Format

Print the result of $a^b + c^d$ on one line.

Sample Input

Sample Output

4710194409608608369201743232

Note: This result is bigger than $2^{63} - 1$. Hence, it won't fit in the long long int of C++ or a 64-bit integer.