
Prime Factors

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

Given a number N . Print the prime factors of N in the following form: $(P_1)^x * (P_2)^y * (P_3)^z * \dots$

Note: P_1, P_2, \dots, P_i are prime factors of N .

For example:

If $N = 1260$: $1260 = 2*2*3*3*5*7$ then print $(2^2)*(3^2)*(5^1)*(7^1)$.

Input

Only one line contains a number N ($2 \leq N \leq 2 * 10^7$).

Output

Print N in this form $(P_1)^x * (P_2)^y * (P_3)^z * \dots$

Example

standard input	standard output
1260	$(2^2)*(3^2)*(5^1)*(7^1)$
1677060	$(2^2)*(3^2)*(5^1)*(7^1)*(11^3)$
1299721	(1299721^1)