

**DWITE Online Computer Programming Contest
December 2004**

Problem 1

Prime Factorization

Prime factorization, or prime decomposition, is the expression of a positive integer as a product of prime numbers.

For example:

$$24 = 2 * 2 * 2 * 3$$

$$348 = 2 * 2 * 3 * 29$$

Write a program that will find the prime factorization of a positive integer.

The input file (**DATA11.txt** for the first submission and **DATA12.txt** for the second submission) will contain five lines of data. Each line will contain a positive integer n , $2 \leq n \leq 2000000000$.

The output file (**OUT11.txt** for the first submission and **OUT12.txt** for the second submission) will contain five lines of data, corresponding to the input file. It will contain the prime factorization of n . Each prime factor will be separated by an asterisk.

<u>Sample Input (Only three lines given)</u>	<u>Sample Output</u>
24	2*2*2*3
348	2*2*3*29
124985	5*7*3571