

Program Description I

Program Title Fast Factorial Factor Finder

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Program Description, Equations, Variables

Given an integer n , the program produces the prime factors of $n!$ (n factorial) and the multiplicity of each factor. This allows cancellation of common factors by adding or subtracting exponents.

The output is in the form $rrr.mmmm$, where

rrr = prime factor

$mmmm$ = multiplicity of rrr

HP-67 users may wish to replace the - x - in step 030 with a R/S to avoid missing any factors.

Operating Limits and Warnings n must be an integer in the range $1 < n < 10008$.

The program will take some time for large n , ie $n=1000$ will take about 45 minutes.

This program has been verified only with respect to the numerical example given in *Program Description II*. User accepts and uses this program material AT HIS OWN RISK, in reliance solely upon his own inspection of the program material and without reliance upon any representation or description concerning the program material.

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Program Description II

Sketch(es)

Sample Problem(s)

Find the prime factors of 16! (2092 27898 88000).

Solution(s) 16 A

2.0015 ***

3.0006 ***

5.0003 ***

7.0002 ***

11.0001 ***

13.0001 ***

0. (signals end of run)

This is interpreted as $16! = 2^{15} * 3^6 * 5^3 * 7^2 * 11^1 * 13^1$

Reference(s)

Lichtenwalner, Joel, PPC JOURNAL V5N8P46, September/October 1978.
(2957)

n→Factors

2

[illegible]

REGISTERS

0	1	2	3	4	5	6	7	8	9
n	used	used	used						
S0	S1	S2	S3	S4	S5	S6	S7	S8	S9
A		B		C		D		E	
								I	

