CodeVita
The TCS Global Coding Contest

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04 Hr 42 Min 28 Sec

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Coding Area

A B C D E F

ONLINE EDITOR (F)

Distint Partitions

Problem Description

Among the several path breaking contributions to Number theory by the famous Indian mathematician Srinivasa Ramanujan, his contribution to partitions is extensive and deep. A partition of a positive integer n, also called an integer partition, is a way of writing n as a sum of positive integers. Two sums that differ only in the order of their summands are considered the same partition. For example, 4 can be expressed as a sum of positive integers in the following ways,: 1+1+1+1, 1+1+2, 1+3, 2+2, 4. Of these, only 1+3 and 4 use non repeating summands. Partitions using non repeating summands are called distinct partitions of n. There is no general formula for the number of partitions of an integer n and it is known that the partitions grow rapidly with n.

A k-distinct-partition of a number n is a set of k distinct positive integers that add up to n. Hence, if we look at 3-distict partitions of 10, they are the partitions 1+2+7, 1+3+6,1+4+5 and 2+3+5

The objective is to count all k-distinct partitions of a number that have at least two prime numbers in the elements of the partition

Constraints

k<N<200, so that at least one k-distinct partition exists

Input Format

The input consists of one line containing of N and k separated by a comma

Output

One number denoting the number of k-distinct partitions of N that have at least two prime numbers in the elements of the partition.

Explanation

Example 1

Input

10,3

Output

2

Explanation : The input asks for 3-distinct-partitions of 10. There are 4 of them (1+2+7, 1+3+6, 1+4+5 and 2+3+5). Of these, only 2 have at least two primes in the partition (1+2+7, 2+3+5)

Example 2

Input

12,3

Output

2

Explanation : The input asks for 3-distinct partitions of 12. There are 7 of them (1+2+9, 1+3+8, 1+4+7, 2+3+7, 1+5+6, 2+4+6 , 3+4+5). Of these 2 (2+3+7 and 3+4+5) have at least 2 primes. Hence the output is 2.

Upload Solution [Question : F]

☐ I, **siddharth prince** confirm that the answer submitted is my own.

☐ Took help from online sources (attributions)

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