

# Re: asking suggestions on the algorithm in computation.Thanks.

**Source:** <http://sci.tech-archive.net/Archive/sci.stat.math/2004-10/0513.html>

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**Date:** 10/29/04

Date: Fri, 29 Oct 2004 16:46:10 +0000 (UTC)

In <9e847e5e.0410290733.2b198d62@posting.google.com> buaanupt@sina.com (ZHANG Yan) writes:

>Thank you very much for your comments. I am very sorry that I have not  
>stated the questions very clearly. Hope that the following is more  
>clear.

>////////////////////////////////////

>Input: k,A,b  
>//k is integer; A is integer; b is integer  
>Output:X

>X = 0.0  
>for k = 1..A  
> for all possible set (m\_1,m\_2,...,m\_k) satisfying m\_1+m\_2+...+m\_k =  
>b  
> X = X + f\_1(m\_1) \* f\_2(m\_2) \* ... \* f\_k(m\_k)  
> end  
>end

>//in this algorithm, f\_i(m\_i) is a function with m\_i as input.

Assuming that m\_1, ... m\_k are integers, look at the problem for a fixed k. Then each f\_k() will be called with the same arguments added the same number of times as any other f\_k(). Then, e.g. each f\_k() will be called with the value b once, with the value b - 1 k - 1 times, with the value b - 2 k - 1 + (k - 1) \* (k - 2)/2 times ... so this is really a combinatorics problem.

>The difficulty lies in the fact that there are too many possible  
>combination of set (m\_1,m\_2,...,m\_k) satisfying m\_1+m\_2+...+m\_k = b.  
>So, the number of cycle is ver high.

You don't have to enumerate the combinations, you just have to count them.

sci.stat.math: Re: asking suggestions on the algorithm in computation.Thanks.

>*Can you plz give some suggestions in reduce the computation time and*

>*complexity? Thank you very much.*

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>*Y.ZHANG*

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