USA Computing Olympiad

OVERVIEW TRAINING CONTESTS HISTORY STAFF RESOURCES

USACO 2016 February Contest, Bronze
Problem 1. Milk Pails

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Contest has ended.

Submitted; Results below show the outcome for each judge test case

	1	2	3	4	5	6	7	8	9	10
	*	*	*	*	*	*	*	*	*	*
	32.2mb	32.1mb	32.1mb	32.1mb	32.1mb	32.0mb	32.1mb	32.1mb	32.4mb	32.4mb
	174ms	170ms	178ms	200ms	178ms	162ms	183ms	165ms	173ms	167ms

English (en)

Farmer John has received an order for exactly M units of milk ($1 \leq M \leq 1,000$) that he needs to fill right away. Unfortunately, his fancy milking machine has just become broken, and all he has are three milk pails of integer sizes X, Y, and M ($1 \leq X < Y < M$). All three pails are initially empty. Using these three pails, he can perform any number of the following two types of operations:

- He can fill the smallest pail (of size X) completely to the top with X units of milk and pour it into the size-M pail, as long as this will not cause the size-M pail to overflow.

- He can fill the medium-sized pail (of size Y) completely to the top with Y units of milk and pour it into the size-M pail, as long as this will not cause the size-M pail to overflow.

Although FJ realizes he may not be able to completely fill the size-M pail, please help him determine the maximum amount of milk he can possibly add to this pail.

INPUT FORMAT (file pails.in):

The first, and only line of input, contains X, Y, and M, separated by spaces.

OUTPUT FORMAT (file pails.out):

Output the maximum amount of milk FJ can possibly add to the size-M pail.

SAMPLE INPUT:

```
17 25 77
```

SAMPLE OUTPUT:

```
76
```

In this example, FJ fills the pail of size 17 three times and the pail of size 25 once, accumulating a total of 76 units of milk.

Problem credits: Brian Dean

Language: C

Source File: Choose File No file chosen

Submit Solution

Note: Many issues (e.g., uninitialized variables, out-of-bounds memory access) can cause a program to produce different output when run multiple times; if your program behaves in a manner inconsistent with the official contest results, you should probably look for one of these issues. Timing can also differ slightly from run to run, so it is possible for a program timing out in the official results to occasionally run just under the time limit in analysis mode, and vice versa. Note also that we have recently changed grading servers, and since our new servers run at different speeds from the servers used during older contests, timing results for older contest problems may be slightly off until we manage to re-calibrate everything properly.