

Problem 2240: Number of Ways to Buy Pens and Pencils

Problem Information

Difficulty: Medium

Acceptance Rate: 56.38%

Paid Only: No

Tags: Math, Enumeration

Problem Description

You are given an integer `total` indicating the amount of money you have. You are also given two integers `cost1` and `cost2` indicating the price of a pen and pencil respectively. You can spend **part or all** of your money to buy multiple quantities (or none) of each kind of writing utensil.

Return **the number of distinct ways** you can buy some number of pens and pencils.

Example 1:

Input: `total = 20, cost1 = 10, cost2 = 5` **Output:** `9` **Explanation:** The price of a pen is 10 and the price of a pencil is 5. - If you buy 0 pens, you can buy 0, 1, 2, 3, or 4 pencils. - If you buy 1 pen, you can buy 0, 1, or 2 pencils. - If you buy 2 pens, you cannot buy any pencils. The total number of ways to buy pens and pencils is $5 + 3 + 1 = 9$.

Example 2:

Input: `total = 5, cost1 = 10, cost2 = 10` **Output:** `1` **Explanation:** The price of both pens and pencils are 10, which cost more than total, so you cannot buy any writing utensils. Therefore, there is only 1 way: buy 0 pens and 0 pencils.

Constraints:

`1 ≤ total, cost1, cost2 ≤ 106`

Code Snippets

C++:

```
class Solution {  
public:  
    long long waysToBuyPensPencils(int total, int cost1, int cost2) {  
  
    }  
};
```

Java:

```
class Solution {  
    public long waysToBuyPensPencils(int total, int cost1, int cost2) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def waysToBuyPensPencils(self, total: int, cost1: int, cost2: int) -> int:
```