Problem 3492: Maximum Containers on a Ship

Problem Information

Difficulty: Easy
Acceptance Rate: 74.99%
Paid Only: No
Tags: Math

Problem Description

You are given a positive integer `n` representing an `n x n` cargo deck on a ship. Each cell on the deck can hold one container with a weight of **exactly** `w`.

However, the total weight of all containers, if loaded onto the deck, must not exceed the ship's maximum weight capacity, `maxWeight`.

Return the **maximum** number of containers that can be loaded onto the ship.

Example 1:

Input: n = 2, w = 3, maxWeight = 15

Output: 4

Explanation:

The deck has 4 cells, and each container weighs 3. The total weight of loading all containers is 12, which does not exceed `maxWeight`.

Example 2:

Input: n = 3, w = 5, maxWeight = 20

Output: 4

Explanation:

The deck has 9 cells, and each container weighs 5. The maximum number of containers that can be loaded without exceeding `maxWeight` is 4.

Constraints:

* `1 <= n <= 1000` * `1 <= w <= 1000` * `1 <= maxWeight <= 109`

Code Snippets

C++:

```
class Solution {
public:
int maxContainers(int n, int w, int maxWeight) {

}
};
```

Java:

```
class Solution {
public int maxContainers(int n, int w, int maxWeight) {

}
}
```

Python3:

```
class Solution:
def maxContainers(self, n: int, w: int, maxWeight: int) -> int:
```