

# 668. Kth Smallest Number in Multiplication Table

## Description

Nearly everyone has used the [Multiplication Table](#) . The multiplication table of size `m x n` is an integer matrix `mat` where `mat[i][j] == i * j` ( **1-indexed** ).

Given three integers `m` , `n` , and `k` , return *the `kth` smallest element in the `m x n` multiplication table* .

### Example 1:

|  |  |  |   |   |   |  |  |  |
|--|--|--|---|---|---|--|--|--|
|  |  |  | 1 | 2 | 3 |  |  |  |
|  |  |  | 2 | 4 | 6 |  |  |  |
|  |  |  | 3 | 6 | 9 |  |  |  |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | 3 | 4 | 6 | 6 | 9 |
|---|---|---|---|---|---|---|---|---|

**Input:** `m = 3, n = 3, k = 5`  
**Output:** `3`  
**Explanation:** The 5<sup>th</sup> smallest number is 3.

### Example 2:

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 2 | 4 | 6 |

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | 4 | 6 |
|---|---|---|---|---|---|

**Input:** `m = 2, n = 3, k = 6`  
**Output:** `6`  
**Explanation:** The 6<sup>th</sup> smallest number is 6.

### Constraints:

- `1 <= m, n <= 3 * 104`
- `1 <= k <= m * n`

