322. Coin Change

You are given an integer array `coins` representing coins of different denominations and an integer `amount` representing a total amount of money.

Return *the fewest number of coins that you need to make up that amount*. If that amount of money cannot be made up by any combination of the coins, return `-1`.

You may assume that you have an infinite number of each kind of coin.

Example 1:

```
Input: coins = [1,2,5], amount = 11
Output: 3
Explanation: 11 = 5 + 5 + 1
```

Example 2:

```
Input: coins = [2], amount = 3
Output: -1
```

Example 3:

```
Input: coins = [1], amount = 0
Output: 0
```

Constraints:

- $1 \le n \le 12$
- $1 \le coins_i \le 2^{31} - 1$
- $0 \le amount \le 10^4$

__Overnight__

Your task is to calculate how many ways you can get the sum n by rolling the dice. Each roll of the dice produces a result between 1 and 6.

For example, if n = 3, the options are:

- 1 + 1 + 1
- 1 + 2
- 2 + 1
- 3

Input

The input is a number, n: target amount.

Printout

Your program should print one integer: how many ways can you get the sum.

Bounds

- $1 \leq n \leq 50$

Example

Input:

```
3
```

Printout:

```
4
```

Reset

You have been given a number, n and your task is to get 0 from it. You get to subtract one of the digits from the number at each step.

What is the minimum number of steps required to successfully reset?

Input

The input is a number, n.

Printout

Your program should print the smallest number of steps to reset the number to zero.

Bounds

- $1 \leq n \leq 10^6$

Example

Input:

```
27
```

Printout:

```
5
```

Explanation: The reset is done like this: 27→20→18→10→9→0

Grid

You have been given an n×m-sized grid, each square of which is a floor or a wall. Your task is to walk from the top left corner of the grid to the bottom right corner along the floor. You can move one step to the right or down with each move.

How many routes like the one described exist?

Input

The first line of input contains integers m and n: grid size.

After this, the input contains a description of the grid. Each square is a floor (.) or a wall (*).

Printout

Your program should output a single integer: the number of routes modulo $10^9 + 7$.

Bounds

- $1 \leq n, m \leq 1000$

Example

Input:

```
3 4
....
.*.*
....
```

Printout:

2