

A number is called a *factorion* in base  $b$  if it is equal to the sum of the factorials of its digits in base  $b$ . For example, 145 is a *factorion* in base 10 because  $145 = 1! + 4! + 5!$ .

Given a base  $b$ , your task is to find all the *factorions* in base  $b$ .

### Example

For  $b = 10$ , the output should be

`Factorion(b) = "[1, 2, 145, 40585]"`.

1, 2, 145, 40585 are the only *factorions* in base 10.

### Input/Output

- **[time limit] 4000ms (py3)**
- **[input] integer  $b$**

*Constraints:*

$$2 \leq b < 40.$$

- **[output] string**

A list of all the *factorions* in base  $b$  as a string.