

Assignment 1

SUSTech plans to establish a new library and now invites you to join its development.

1. The library maintains the purchase information of books: book number (8 digits), book price, number of books purchased. However, some books were incorrectly numbered. Now, we need to update it according to this rule: change the beginning of a book number that does not begin with "2020" to "2020" and calculate the total price of the book. Note that the total price needs to be rounded and printed with the correct book number in an integer format. [15 marks]

The input contains one line, including the book number, book price, and number of books purchased. The data in each line is separated by a space.

Sample: Read in using Scanner:

```
20180204 29.6 4
```

The output contains one line, including the correct book number and the total price. The data is separated by a space.

Be careful not to output extra spaces and line breaks.

Output:

```
20200204 118
```

2. It is assumed that every book in the library has a non negative number called the search code, which is used to search books quickly. At the same time, each borrower has a borrower code. For student A, if the search code of a book is an integral multiple of the borrower code, it is the book he likes. Given a book search code, judge whether it is a book that student A likes. [20 marks]

The first line's code is the borrower code, while the code in the next line is the book search code.

Sample: Read in using Scanner:

```
123
123
```

The output contains one line, in which Yes means "like the book", No means "dislike the book".

Be careful not to output extra spaces and line breaks.

Output:

Yes

3. Each book has an ISBN code, the format of which is "x-xxx-xxxxx-x". For example, one ISBN code is "0-894-32123-4". Its last digit is the identification code, which is calculated by the following: $(0 \times 1 + 8 \times 2 + 9 \times 3 + \dots + 3 \times 9) \% 11$. Note that, if the remainder is 10, then the identification code should be the capital letter X. Given an ISBN code, if its identification code is correct, please output Yes, otherwise No. [20 marks]

The input contains one line, which includes an ISBN code.

Sample: Read in using Scanner:

0894321234

The output contains one line: or .

Be careful not to output extra spaces and line breaks.

Output:

Yes

4. The library information management system needs to record the lending and returning date of each book. However, due to system faults, some of these dates become invalid. In our system, the date format is MM DD, which represents month and day respectively. The administrator wants to change the number on several digits so that these dates become valid. Please output the minimum digits that need to be changed. (In order to simplify the problem, leap year is not considered). [20 marks]

The input is the date information. MM and DD is separated by a space.

Sample: Read in using Scanner:

01 00

The output shows the minimum number of changes.

Be careful not to output extra spaces and line breaks.

Output:

1

More samples:

sample one:

input: 01 32

output: 1

sample two:

input: 34 56

output : 2

Hint:

For sample one, one possible case is 01 31 , then we need to change 1 number.

For sample two, one possible case is 04 16 , then we need to change 2 numbers.

5. You're going to return a book. A book can be borrowed for at most 30 days. If you return it late, you need to pay the late fee. The fee is ¥ 0.5 per day in the first 30 days late, and ¥ 0.7 per day afterwards. If the book is late for more than 180 days, please pay the maximum fee ¥ 250. [25 marks]

Be careful not to output extra spaces and line breaks.

The input contains one line, including the date `YYYYMMDD` you borrowed the book, and the date you returned the book. Two dates are separated by a space.

Sample one: Read in using Scanner:

```
20200208 20200301
```

The output contains one line. If you can return the book without a late fee, please output `The return is successful!` However, if you need to pay the late fee, please output `You are late, please pay X yuan!` (X has one decimal)

Be careful not to output extra spaces and line breaks.

Output:

```
The return is successful!
```

Sample two: Read in using Scanner:

```
20200101 20200201
```

Be careful not to output extra spaces and line breaks.

Output:

```
You are late, please pay 0.5 yuan!
```
