en[i]gma 0x02 Junior

December 15, 2024

Problems

Problem	Time Limit	Memory Limit	Points
Echo	1 sec	64MB	100
Trip to Haroumpia	1 sec	64MB	100
Group Trip to Haroumpia	1 sec	64MB	100
The Magic Number	1 sec	64MB	100
Annoula's Pattern	1 sec	64MB	100
Total			500

Echo

Annoula is standing at the top of **Karambola** on Mount Parnitha and playing with the echo of her voice. She shouts numbers loudly and after a while, she hears them repeating. Can you write a program that takes Annoula's voice as input and outputs the response of the echo?

The **input** is the number that Annoula shouts.

The **output** is the number that the echo answers.

Example

Input

```
50
```

Output

```
50
```

Trip to Haroumpia

Annoula is planning a trip to Haroumpia, where the currency is the "ha-hanolira." She has gathered some money and wants to calculate how many hahanoliras she will have.
She knows that 1 euro is equal to 3 chachanoliras.

The **input** is Annoula's money in euros.
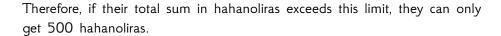
The **output** is her money in hahanoliras.

Example

Input

```
50
```

Output

```
150
```

Group Trip to Haroumpia

Totos and Annoula are planning a trip to Haroumpia, where the currency is the hahanolira. They have gathered some money and want to calculate how many hahanoliras they will be able to get in total.

They know that 1 euro is equal to 3 hahanoliras. They also know that the exchange office can give them a maximum of 500 hahanoliras.

Therefore, if their total sum in hahanoliras exceeds this limit, they can only get 500 hahanoliras.

The **input** is Totos and Annoula's money in euros.

The **output** is the total amount of their money in hahanoliras.

Examples

1st

Input

```
50
30
```

Output

```
240
```

2nd

Input

```
200
100
```
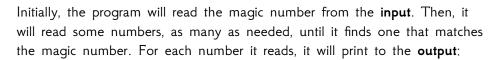
Output

```
500
```

Explanation of the second example:

Totos has 200 euros and Annoula has 100 euros, so together they have $200 + 100 = 300$ euros. This corresponds to $300 \times 3 = 900$ chachanoliras. However, 900 is more than the 500 limit of the exchange office, so they can only get 500 chachanoliras.

The Magic Number

Totos is preparing to guess the magic number and win in the lucky game with the same name. To do this, he decided to create the following program on his computer to practice.

Initially, the program will read the magic number from the **input**. Then, it will read some numbers, as many as needed, until it finds one that matches the magic number. For each number it reads, it will print to the **output**:

- 1 , if the number read is smaller than the magic number,
- 2 , if the number read is greater than the magic number,
- 0 , when the number read equals the magic number.

Examples

1st

Input

```
100
5
100
```

Output

```
1
0
```

Explanation of the first example:

The input contains the magic number 100 and 2 guesses, 5 and 100 .
The output first prints 1 because $5 < 100$, and then prints 0 because $100 = 100$.

2nd

Input

```
10
11
9
12
10
```

Output

```
2
1
2
```

```
0
```

Explanation of the second example:

The input contains the magic number 10 and 4 guesses: 11 , 9 , 12 and 10 .

The output first prints 2 because $11 > 10$, then 1 because $9 < 10$, followed by 2 because $12 > 10$, and finally 0 because $10 = 10$.

3rd

Input

```
10
3
10
11
```

Output

```
1
0
```

Explanation of Example 3:

The input contains the magic number 10 and 3 guesses: 3 , 10 and 11 .

The output first prints 1 because $5 < 100$, and then prints 0 because $10 = 10$.

No further numbers are printed because the program **stopped** when the magic number was found.

Annoula's Pattern

Annoula is learning about the binary system (0 and 1) at school and gets so excited that she decides to create a design using a sequence of 10 digits consisting only of 0 and 1 . Because she loves order and harmony, she decides that the sequence of numbers will always start with 0 , and the remaining digits will alternate, creating a beautiful pattern.

Totos observes her design and decides to mess with her. When she is away, he goes and changes some 0 s to 1 s and some 1 s to 0 s, disrupting the pattern. When Annoula returns, she sees that something is wrong and wants to fix the design.

Can you help Annoula calculate how many characters have been altered by Toto?;

The **input** is the sequence of 10 numbers after Totos has changed them.

The **output** is the number of digits that were altered.

Example

Input

```
0
1
0
1
1
1
0
0
0
1
```

Output

```
2
```