

# Beautiful Days at the Movies



Lily likes to play games with integers. She has created a new game where she determines the difference between a number and its reverse. For instance, given the number **12**, its reverse is **21**. Their difference is **9**. The number **120** reversed is **21**, and their difference is **99**.

She decides to apply her game to decision making. She will look at a numbered range of days and will only go to a movie on a *beautiful day*.

Given a range of numbered days,  $[i \dots j]$  and a number  $k$ , determine the number of days in the range that are *beautiful*. Beautiful numbers are defined as numbers where  $|i - \text{reverse}(i)|$  is evenly divisible by  $k$ . If a day's value is a beautiful number, it is a beautiful day. Print the number of beautiful days in the range.

## Function Description

Complete the *beautifulDays* function in the editor below. It must return the number of beautiful days in the range.

*beautifulDays* has the following parameter(s):

- $i$ : the starting day number
- $j$ : the ending day number
- $k$ : the divisor

## Input Format

A single line of three space-separated integers describing the respective values of  $i$ ,  $j$ , and  $k$ .

## Constraints

- $1 \leq i \leq j \leq 2 \times 10^6$
- $1 \leq k \leq 2 \times 10^9$

## Output Format

Print the number of *beautiful* days in the inclusive range between  $i$  and  $j$ .

## Sample Input

```
20 23 6
```

## Sample Output

```
2
```

## Explanation

Lily may go to the movies on days **20**, **21**, **22**, and **23**. We perform the following calculations to determine which days are *beautiful*:

- Day **20** is *beautiful* because the following evaluates to a whole number:  $\frac{|20 - 02|}{6} = \frac{18}{6} = 3$

- Day **21** is *not beautiful* because the following doesn't evaluate to a whole number:  $\frac{|21-12|}{6} = \frac{9}{6} = 1.5$
- Day **22** is *beautiful* because the following evaluates to a whole number:  $\frac{|22-22|}{6} = \frac{0}{6} = 0$
- Day **23** is *not beautiful* because the following doesn't evaluate to a whole number:  $\frac{|23-32|}{6} = \frac{9}{6} = 1.5$

Only two days, **20** and **22**, in this interval are beautiful. Thus, we print **2** as our answer.