

Problem B. Beautiful Days at the Movies

OS Linux

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. Return the number of beautiful days in the range.

Function Description

Complete the *beautifulDays* function in the editor below.

beautifulDays has the following parameter(s):

- *int i*: the starting day number
- *int j*: the ending day number
- *int k*: the divisor

Returns

- *int*: the number of beautiful days in the range

Input Format

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

Constraints

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

Input	Output
20 23 6	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.