**Task-I: FrogJmp**

A small Frog/Kid/Deer wants to get to the other side of the road. The Frog/Kid/Deer is currently located at position X and wants to get to a position greater than or equal to Y. The small frog always jumps a fixed distance, D.

Count the minimal number of jumps that the small frog must perform to reach its target.

Write a function:

class Solution { public int solution(int X, int Y, int D); }

that, given three integers X, Y and D, returns the minimal number of jumps from position X to a position equal to or greater than Y.

For example, given:

X = 10 Y = 85 D = 30

the function should return 3, because the frog will be positioned as follows:

* after the first jump, at position 10 + 30 = 40
* after the second jump, at position 10 + 30 + 30 = 70
* after the third jump, at position 10 + 30 + 30 + 30 = 100

Write an **efficient** algorithm for the following assumptions:

* X, Y and D are integers within the range [1..1,000,000,000];
* X ≤ Y.

**Task-II: PermMissingElem**

An array A consisting of N different integers is given. The array contains integers in the range [1..(N + 1)], which means that exactly one element is missing.

Your goal is to find that missing element.

Write a function:

class Solution { public int solution(int[] A); }

that, given an array A, returns the value of the missing element.

For example, given array A such that:

A[0] = 2 A[1] = 3 A[2] = 1 A[3] = 5

the function should return 4, as it is the missing element.

Write an **efficient** algorithm for the following assumptions:

* N is an integer within the range [0..100,000];
* the elements of A are all distinct;
* each element of array A is an integer within the range [1..(N + 1)].

**Task-III: TapeEquillibrium**

A non-empty array A consisting of N integers is given. Array A represents numbers on a tape.

Any integer P, such that 0 < P < N, splits this tape into two non-empty parts: A[0], A[1], ..., A[P − 1] and A[P], A[P + 1], ..., A[N − 1].

The *difference* between the two parts is the value of: |(A[0] + A[1] + ... + A[P − 1]) − (A[P] + A[P + 1] + ... + A[N − 1])|

In other words, it is the absolute difference between the sum of the first part and the sum of the second part.

For example, consider array A such that:

A[0] = 3 A[1] = 1 A[2] = 2 A[3] = 4 A[4] = 3

We can split this tape in four places:

* P = 1, difference = |3 − 10| = 7
* P = 2, difference = |4 − 9| = 5
* P = 3, difference = |6 − 7| = 1
* P = 4, difference = |10 − 3| = 7

Write a function:

class Solution { public int solution(int[] A); }

that, given a non-empty array A of N integers, returns the minimal difference that can be achieved.

For example, given:

A[0] = 3 A[1] = 1 A[2] = 2 A[3] = 4 A[4] = 3

the function should return 1, as explained above.

Write an **efficient** algorithm for the following assumptions:

* N is an integer within the range [2..100,000];
* each element of array A is an integer within the range [−1,000..1,000].