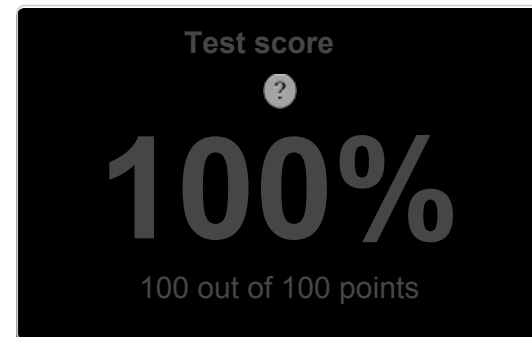# Demo ticket

## Session

**ID:** demoUSFW8Z-9G5
**Time limit:** 120 min.

## Status: closed

**Created on:** 2014-03-17 17:36 UTC
**Started on:** 2014-03-17 17:36 UTC
**Finished on:** 2014-03-17 17:48 UTC

## Tasks in test

## Task score

## Test score

?

# 100%

100 out of 100 points

**EASY**

## 1. FrogJmp

Count minimal number of jumps from position X to Y.

## score: 100 of 100

### Task description

A small frog wants to get to the other side of the road. The frog 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:

        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

Assume that:

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

Complexity:

- expected worst-case time complexity is O(1);
- expected worst-case space complexity is O(1).

### Solution

**Programming language used:** C++

**Total time used: 12 minutes**                ?

**Effective time used: 12 minutes**            ?

**Notes:**  correct functionality and scalability

### Task timeline                              ?

|◀   ◀◀   ▶   ■   ▶▶   ▶|

17:36:36                                    17:48:12

Code: 17:48:12 UTC, cpp, final, score: **100.00**

```
1.  // you can also use includes, for example:
2.  // #include <algorithm>
3.  #include <cmath>
4.  int solution(int X, int Y, int D) {
5.      // write your code in C++98
6.      return ceil(((long double)Y - (long double)X) /
        (long double)D);
7.  }
```

### Analysis                                   ?

**Detected time complexity:**

# O(1)

| test | time | result |
|------|------|--------|

| | | |
|---|---|---|
| example<br>example test | 0.020 s. | **OK** |
| simple1<br>simple test | 0.020 s. | **OK** |
| simple2 | 0.020 s. | **OK** |
| extreme_position<br>no jump needed | 0.020 s. | **OK** |
| small_extreme_jump<br>one big jump | 0.020 s. | **OK** |
| many_jump1<br>many jumps, D = 2 | 0.020 s. | **OK** |
| many_jump2<br>many jumps, D = 99 | 0.020 s. | **OK** |
| many_jump3<br>many jumps, D = 1283 | 0.020 s. | **OK** |
| big_extreme_jump<br>maximal number of jumps | 0.020 s. | **OK** |
| small_jumps<br>many small jumps | 0.020 s. | **OK** |

Training center