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5

LIVE EVENTS

## Roy and Ropes

Attempted by: **1870** / Accuracy: **82%** / Maximum Score: **20** / ★★★★★☆ 14 Votes

Tag(s): Ad-Hoc, Dynamic Programming, Easy, Implementation

**PROBLEM**

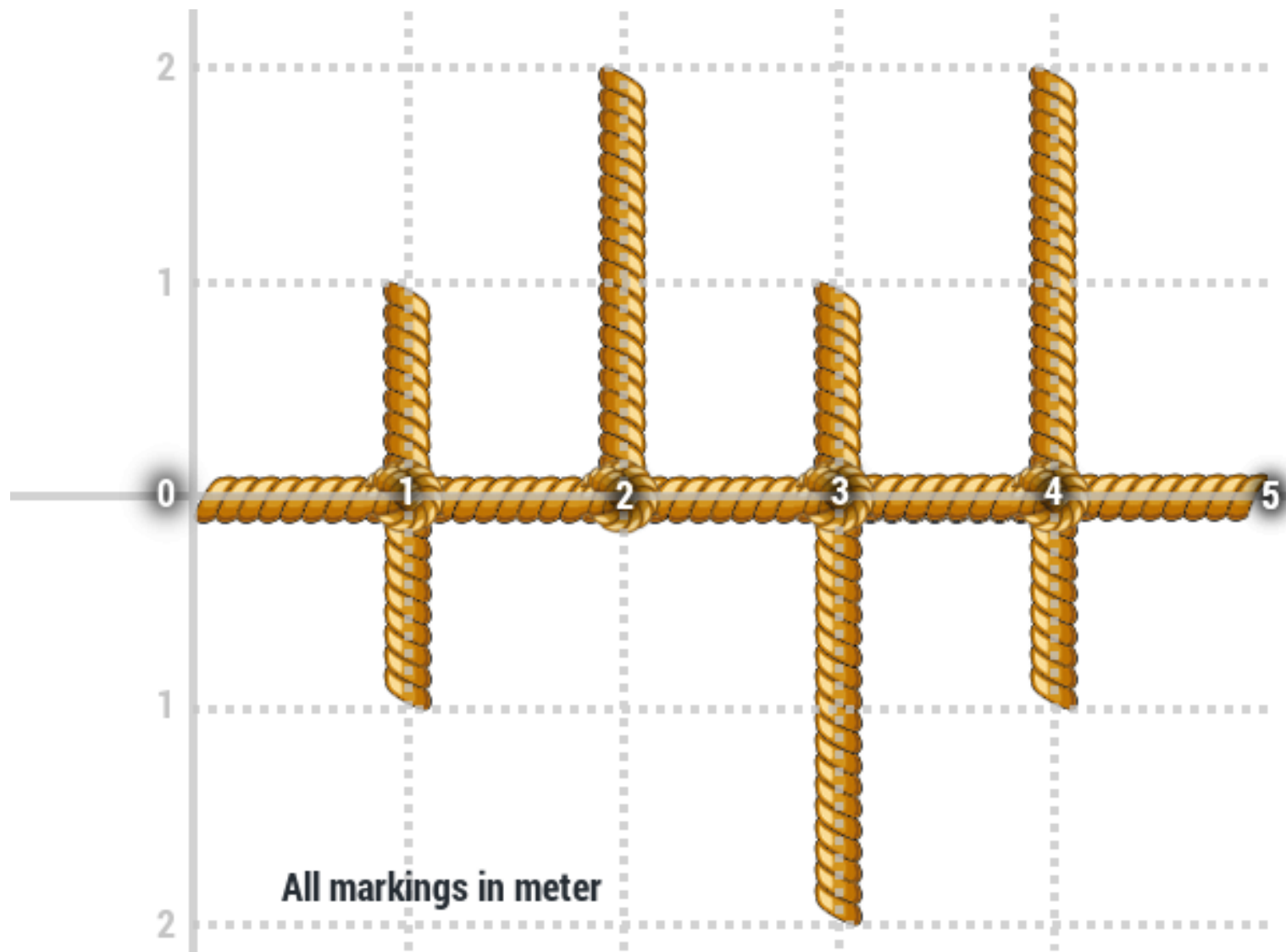
**EDITORIAL**

**ANALYTICS**

Roy has a rope of length

$L$  meters. This rope has several other ropes attached to it at the end of every meter (except for the end of the rope).

At each meter there are two ropes attached to this main rope, let's call them upper and lower ropes. See the following example.



Roy lit the rope on fire from the left end. This fire burns down the rope by **1 meter/minute**.

Your task is to find how much **time (in minutes)** will the fire take to burn down the entire rope.

**Input:**

First line contains

$T$  - number of test cases.

First line of each test case contains

$L$  - length of the rope.

Second line of each test case contains

$L - 1$  integers separated by space denoting lengths of all the upper ropes at each meter.

Third line of each test case contains

$L - 1$  integers separated by space denoting lengths all the lower ropes at each meter.

### Output:

Output the **time (in minutes)** required to burn down the entire rope for each test case in a new line.

### Constraints:

$$1 \leq T \leq 10$$

$$2 \leq L \leq 1000000$$

$$0 \leq \text{upper}[i] \leq 1000000 \text{ where}$$

$$1 \leq i \leq L - 1$$

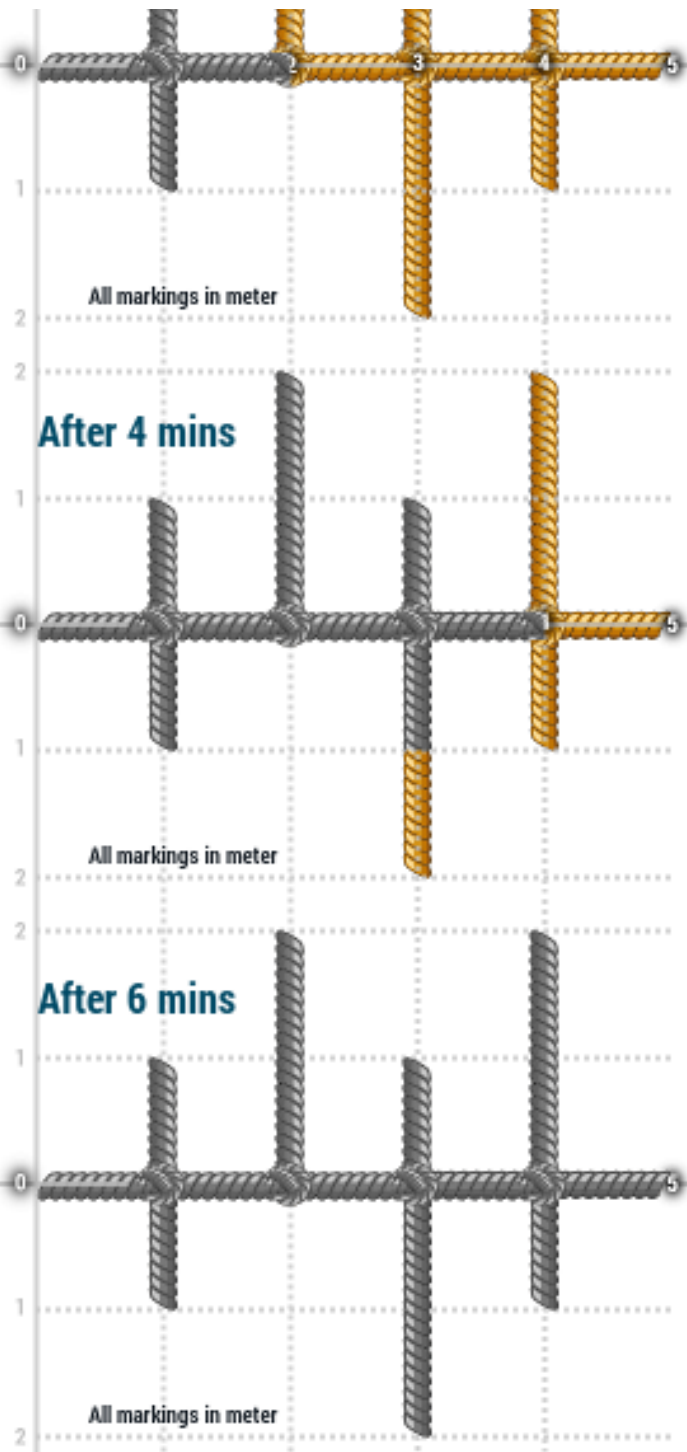
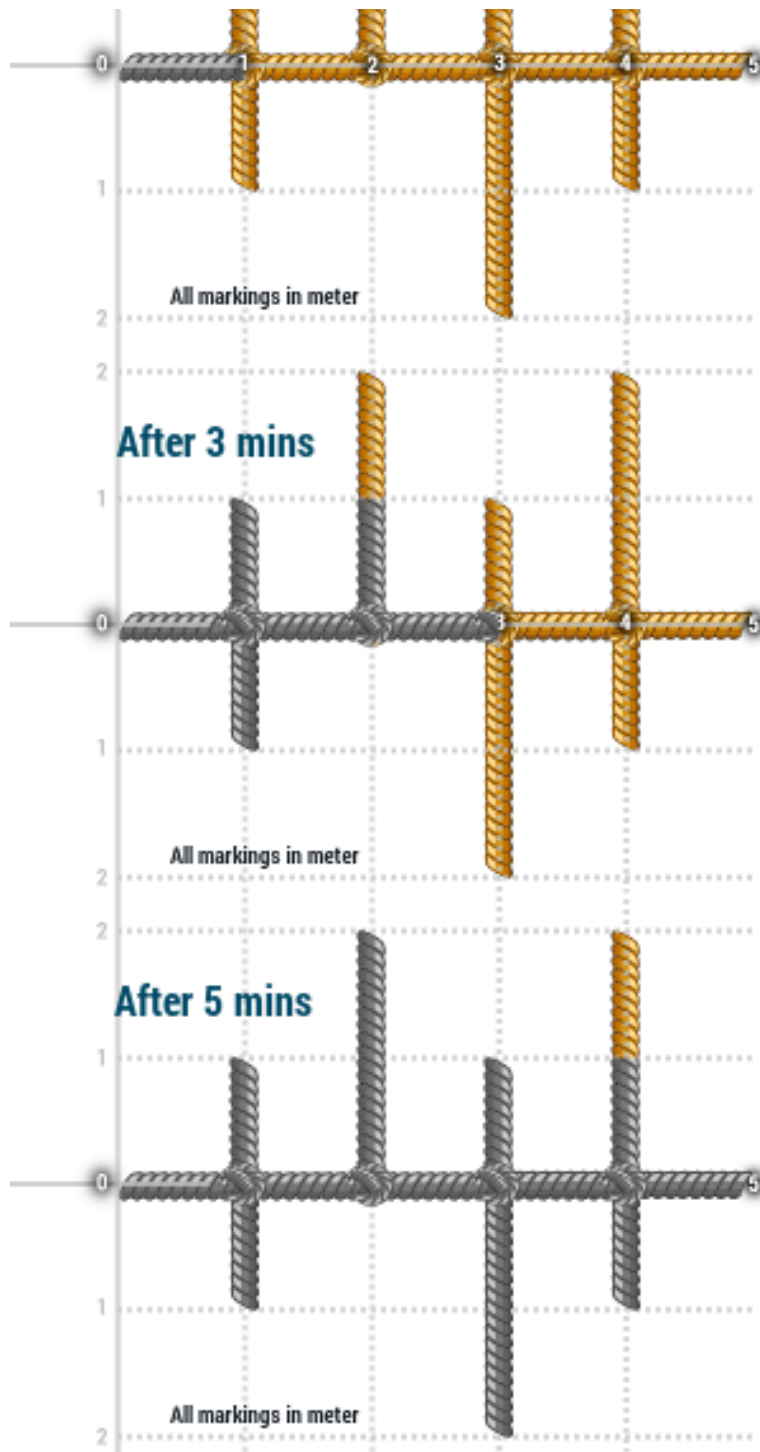
$$0 \leq \text{lower}[i] \leq 1000000 \text{ where}$$

$$1 \leq i \leq L - 1$$

### Sample Explanation:

Follow the nature of fire. Note that after 1 min. Fire can go in all three directions. Hence after 2 mins fire burnt 1 meter in all 3 directions. Rest is explained in the image below.





#### SAMPLE INPUT



```
1
5
1 2 1 2
1 0 2 1
```

#### SAMPLE OUTPUT



```
6
```

**Time Limit:** 1.0 sec(s) for each input file.

**Memory Limit:** 256 MB

**Source Limit:** 1024 KB

**Marking Scheme:** Marks are awarded when all the testcases pass.

**Allowed Languages:** C, C++, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, R(RScript), Racket, Ruby, Rust, Scala, Scala 2.11.8, Swift, Visual Basic

## CODE EDITOR

Your Rating:

PROGRAMMERS WHO SOLVED THIS PROBLEM ALSO SOLVED

Tower Of Hanoi

Attempted By: 577 / Accuracy: 92

Tablets


Attempted By: 827 / Accuracy: 91


Once Upon A Time In Time-Land

Attempted By: 1559 / Accuracy: 58

## BEST SUBMISSIONS

LANGUAGE: **C**

 TIME (sec)  
**0.930179**

 MEMORY (KiB)  
**192**

by [Shubham Kumar](#)

[VIEW BEST SUBMISSION](#)

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## CONTRIBUTOR



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## THIS PROBLEM WAS ASKED IN



CHALLENGE NAME

Zopper Hiring Challenge



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