

ACM ICPC 2017 - Kolkata Kanpur Regional

Problem Discussion

- Reached Safely Or Not
- Triangle Count
- Appearance Count
- Club of Riders
- Get The Gold
- Password Riddle
- Raw Power
- Huge Number of Trees
- Secrets
- Palace of King
- Unpredictable Array

Easy

Easy

Easy - Medium

Easy - Medium

Medium

Medium

Medium

Medium - Hard

Medium - Hard

Hard

Super Easy

Reached Safely Or Not

- Accepted: 160
- First Solve: lastTry
- First Solution Time: 00:07:22

Author: Kazi Hasan Zubaer

Reached Safely Or Not

Analysis

Just keep track of the position and check the end position if it's dangerous, or relative's home, or something else.

Triangle Count

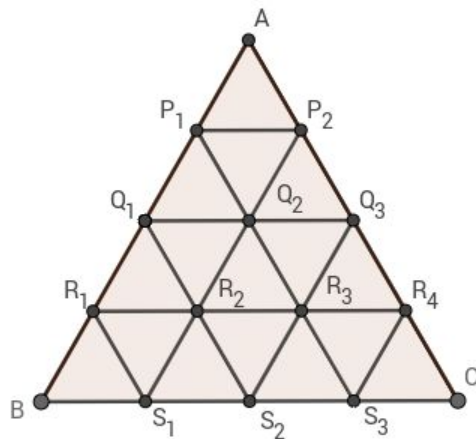
- Accepted: 156
- First Solve: SSH, JGEC
- First Solution Time: 00:10:02

Author: Kazi Hasan Zubaer

Triangle Count

Analysis:

The answer is $1 + 2 + 3 + \dots + (L-K+1)$. That's it, plain as simple. Use the summation formula if you wish.



Appearance Count

- Accepted: 119
- First Solve: WeAreNoobs, IIT Dhanbad
 - First Solution Time: 00:08:43

Author: F. A. Rezaur Rahman Choudhury

Appearance Count

Analysis:

- Number of occurrence of a string in all possible string of length n doesn't depend on the content of the string. It only depends on the length of the string.
- `xxxyyyxxxx`
- Any string of length m appears in all possible strings of length n exactly $(n - m + 1) \cdot 2^{n-m}$ times.

Club of Riders

- Accepted: 109
- First Solve: weakMind, BITS Pilani
 - First Solution Time: 00:34:13

Author: Sheikh Shakib Ahmed

Club of Riders

Analysis

1 5

1 2 5 6



12 2 1 1

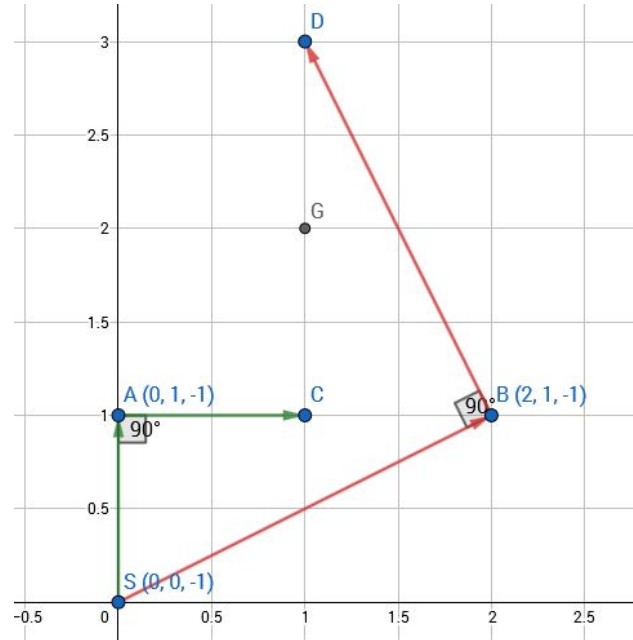
Get The Gold

- Accepted: 32
- First Solve: Supercalifragilistic - IITM
 - First Solution Time: 00:45:03

Author: Dr. Md. Kaykobad

Get The Gold

Analysis



Password Riddle

- Accepted: 8
- First Solve: NeverSettle
- First Solution Time: 03:02:09

Author: Kazi Hasan Zubaer

Password Riddle

Analysis

- All the characters represented by a segments are the same
- The literals will be simply multiplied
- Only 4 primes to consider

two odd three six matches with **C = 666...**

$$\text{len(C)} = 2 * \{1,3,5,7\} * 3$$

Raw Power

- Accepted: 4
- First Solve: TooLazyToPropagate, IITV
 - First Solution Time: 02:25:53

Author: Archit Karandikar

Raw Power

Analysis

- Binary search on the answer, q
- **S** : all the intervals sorted according to start point.
E : all the intervals sorted according to end point.
- **Claim:**
There exist an optimal way where at least one interval

remains stationary



Huge Number of Trees

- Accepted: 1
- First Solve: egglet, IITB
- First Solution Time: 04:51:53

Author: Anindya Das

Huge Number of Trees

Analysis

- **K** nodes in previous level



- **N** nodes remaining
- **D** is the minimum degree
- $S_n(n, k, d) = k * S_n(n-1, k, d) + C(n-1, d-1) * S_n(n-d, k-1, d)$

Secrets

- Accepted: 0
- First Solve: --
- First Solution Time: --

Author: Kazi Hasan Zubaer & Zi Song

Secrets

Analysis

- Your envelope and your best friends envelope are identical
- Number of states: **$10!/(2^5)$**

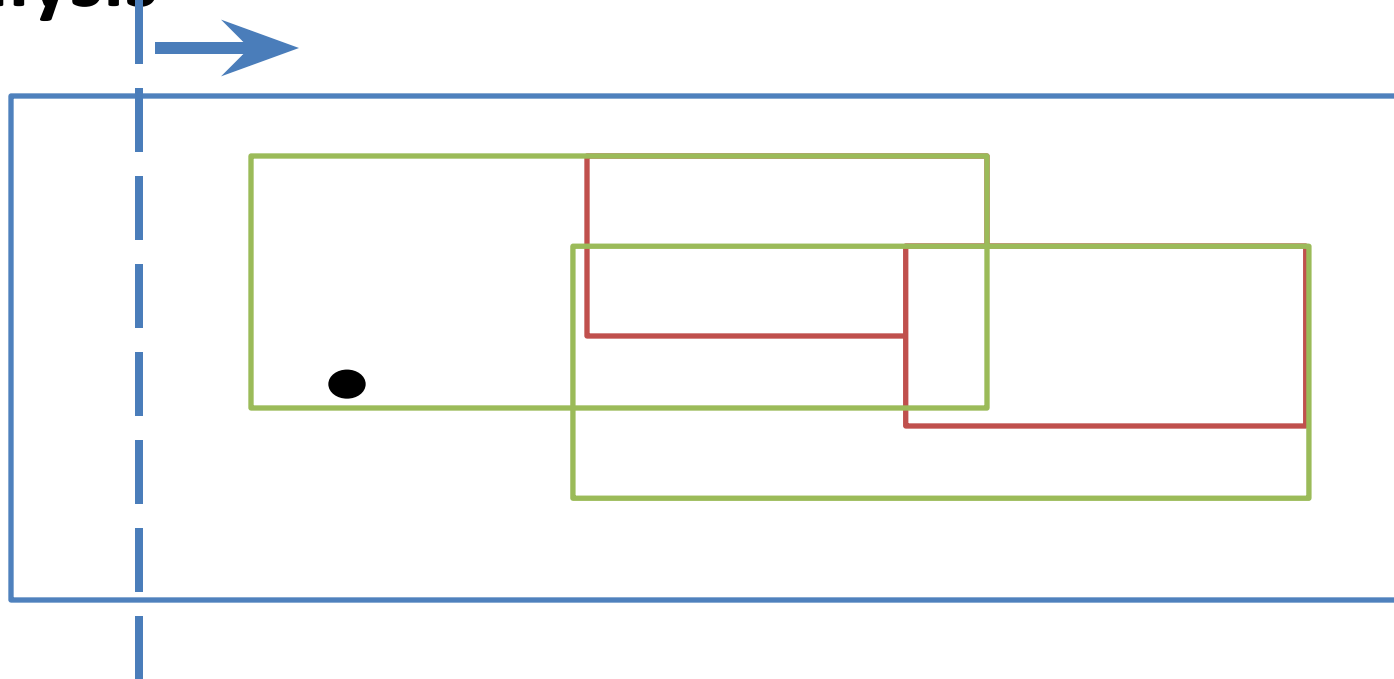
Palace of King

- Accepted: 0
- First Solve: --
- First Solution Time: --

Author: Kazi Hasan Zubaer

Palace of King

Analysis



Unpredictable Array

- Accepted: 0
- First Solve: --
- First Solution Time: --

Author: Repon Kumar Roy

Unpredictable Array