Round 1C 2014

A. Part Elf

B. Reordering Train Cars

C. Enclosure

Contest Analysis

Questions asked 4

Submissions

Part Elf

8pt | Not attempted 4140/5606 users correct (74%)

12pt | Not attempted 2992/4086 users correct (73%)

Reordering Train Cars

10pt | Not attempted 1522/3094 users correct (49%)

25pt | Not attempted 516/847 users correct (61%)

Enclosure

15pt | Not attempted 521/1445 users correct (36%)

30pt | Not attempted 63/194 users correct (32%)

Top Scores

bmerry	100
Endagorion	100
yeputons	100
voover	100
Eryx	100
xiaowuc1	100
eurekash	100
stgatilov	100
Vasyl	100
Merkurev	100

Problem C. Enclosure

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the Quick-Start Guide to get started.

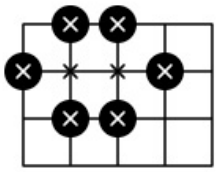
Small input 15 points	Solve C-small
Large input 30 points	Solve C-large

Problem

Your task in this problem is to find out the minimum number of stones needed to place on an N-by-M rectangular grid (N horizontal line segments and M vertical line segments) to enclose at least K intersection points. An intersection point is enclosed if either of the following conditions is true:

1. A stone is placed at the point.
2. Starting from the point, we cannot trace a path along grid lines to reach an empty point on the grid border through empty intersection points only.

For example, to enclose 8 points on a 4x5 grid, we need at least 6 stones. One of many valid stone layouts is shown below. Enclosed points are marked with an "x".



Input

The first line of the input gives the number of test cases, **T**. **T** lines follow. Each test case is a line of three integers: **N M K**.

Output

For each test case, output one line containing "Case #x: y", where x is the test case number (starting from 1) and y is the minimum number of stones needed.

Limits

$1 \le \mathbf{T} \le 100$.
$1 \le \mathbf{N}$.
$1 \le \mathbf{M}$.
$1 \le \mathbf{K} \le \mathbf{N} \times \mathbf{M}$.

Small dataset

$\mathbf{N} \times \mathbf{M} \le 20$.

Large dataset

$\mathbf{N} \times \mathbf{M} \le 1000$.

Sample

Input	Output
2 4 5 8 3 5 11	Case #1: 6 Case #2: 8

 Google Home - Terms and Conditions - Privacy Policies and Principles

Powered by

Google Cloud Platform