Submissions

Closing the Loop

10pt	Not attempted
	285/375 users
	correct (76%)
23pt	Not attempted
	267/285 users
	correct (94%)

Investing at the Market

10pt	Not attempted
	234/303 users
	correct (77%)
23pt	Not attempted
	223/234 users
	correct (95%)

Building a House

10pt	Not attempted
	164/189 users
	correct (87%)
23pt	Not attempted
	148/165 users
	correct (90%)

Top Scores

oa12gb	99
ahmed.aly	99
naguib	99
marcog1	99
amrSamir	99
mohammad.kotb	99
abdo88	99
AhmedSalem	99
OzzyH	99
Abdurrahman	99

Problem C. Building a House

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 10 points	Solve C-small
Large input 23 points	Solve C-large

Problem

You have just bought land and want to plant the largest rectangular field possible. In surveying your land, you find a number of obstacles and decide to draw a map. You indicate in each square of the map whether it contains grass (**G**), rock (**R**), water (**W**), shrubs (**S**), or trees (**T**). While the grass can be mowed and the shrubs dug from the ground, the water, rocks, and trees **cannot** be removed. Given these obstacles, determine the area of the largest rectangular field.

Input

The first line of input gives the number of cases, **N**.
N test cases follow. For each test case there will be:

- One line containing two space-separated integers indicating the length (**L**) and width (**W**) of your land.
- Followed by, **W** lines, each containing **L** characters where each indicates the conditions for that square of land (one of G, R, W, S, or T).

Output

For each test case, output one line containing "Case #**x**: " followed by the maximum area of the largest rectangle that can be cleared.

Limits

$1 \le L \le 50$
$1 \le W \le 50$

Small dataset

N $\le$ 10
Fewer than 5 obstacles in each test case.

Large dataset

N $\le$ 30
Fewer than 20 obstacles in each test case.

Sample

```
Input       Output
4           Case #1: 1
1 1         Case #2: 4
G           Case #3: 2
2 2         Case #4: 9
GS
SG
2 2
GT
GG
5 8
GGTGG
TGGGG
GSSGT
GGGGT
GWGGG
RGTRT
RTGWT
WTWGR
```