ADAlab Online Judge

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ⓘ   About ∨

without formula has initial value 0. For example, cell `B4` has formula `C8 + 763` and cell `B5` has value 0.

ID	spreadsheet
Time Limit	1000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	ta_david
Level	Hidden
Score	100
Tags	Show

However, some cells have buggy formula. The formula of several cells might depend on each other and results in reference error. For example, cell `A1` has formula `B1 + 2`, cell `B1` has formula `C1 + 2`, cell `C1` has formula `A1 + 2`, then the spreadsheet reports reference error.

If a cell has formula depending a cell with reference error, itself encounters reference error as well. For example, cell `C1` has reference error, cell `C4` has formula `C1 + 2`, then `C4` has reference error.

Statistic   Details
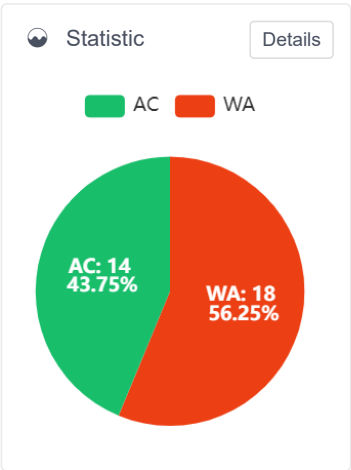
🟩 AC   🟥 WA

AC: 14 43.75%
WA: 18 56.25%

Given a spreadsheet, please output results of all cells.

Input

The first line contains two integer N, M: the number of cells in the spreadsheet and the number of cells with formula.

The cells are labeled with $1, 2, ..., N$ (instead of the usual way we see in spreadsheet applications).

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ℹ About ⌄

- `D x1 x2 x3 x4 y` - Cell x_1 has formula: cell x_2 + cell x_3 + cell x_4 + value y

Constraints

- $1 \leq M \leq N \leq 10^5$
- $1 \leq x_1, x_2, x_3, x_4 \leq N, 1 \leq y \leq 10^6$ for all formula
- x_1 for all formula are distinct
- The result for each cell without reference error does not exceed 10^{18}

Output

For each cell please output "#REF!" if it has reference error, otherwise output its value.

Sample Input 1 📋

```
10 9
A 1 10
B 2 1 20
B 3 2 30
B 4 6 2
B 5 4 2
B 6 5 2
C 7 1 2 2
C 8 7 6 3
D 9 1 2 10 8
```

Sample Output 1

```
10
30
60
#REF!
#REF!
#REF!
42
#REF!
48
0
```

Hint

Explanation of Sample IO

The formula and result of each cell is listed below:

cell id	formula	result
1	10	10
2	cell 1 + 20	30
3	cell 2 + 30	60
4	cell 6 + 2	reference error
5	cell 4 + 2	reference error
6	cell 5 + 2	reference error
7	cell 1 + cell 2 + 2	42
8	cell 7 + cell 6 + 3	reference error
9	cell 1 + cell 2 + cell 10 + 8	48

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For test ID $1, 2$ (20% of total points):

- $N \le 10$

For test ID $3, 4, 5, 6$ (40% of total points):

- $N \le 1000$

For test ID $7, 8, 9, 10$ (40% of total points):

- $N \le 100000$

Language: [C ▾]　[↻]　　　　Theme: [Solarized Light ▾]

[☁]

```
1
```

[🐛 Submit for Sample Test]　[✏ Submit]

Sample Test Input　　　　　**Sample Test Output**

```
10 9
A 1 10
B 2 1 20
B 3 2 30
B 4 6 2
B 5 4 2
B 6 5 2
C 7 1 2 2
C 8 7 6 3
D 9 1 2 10 8
```