B Infinite Stable Integer

For any infinite-length decimal integer **S = $d_1d_2d_3d_4$... (0 ≤ d_i ≤ 9, i ≥1)**, let **prefix(S,p)** be the integer formed by the first **p** digits of **S (i.e. $d_1d_2d_3$...d_p)**, and **F(S,i,p)** be the percentage of digit **i** in **prefix(S,p)**. For example, if **S = 122312231223...**, **F(S,2,7) =** $\frac{4}{7}*100$

We say **S** is stable if and only if every for digit **i (0 ≤ i ≤ 9)**, there exists a real number **L(i)** such that

$$\lim_{p\to\infty} F(S,i,p) = L(i)$$

Given three positive integers **M**, **X** and **Y (0<=X<=Y<M)**, and **10** pairs of integers **(A(0), B(0)), (A(1),B(1)), ..., (A(9),B(9))**, find an infinite stable integer **S** such that:

1. Every **L(i)** satisfies **A(i) ≤ L(i) ≤ B(i)**
2. For every integer **p ≥ 1**, **X ≤ (prefix(S, p) mod M)≤ Y**.

If there are more than one solution, maximize the average value of all the digits in **S**. Since **S** is stable, it can be proven that the average value converges.

For example, if **M=9**, **X=1** and **Y=8**, **B(3)=B(4)=100**, all other **A(i)** and **B(i)** are zero, then the optimal **S** is **44(4444443)***, where * means "repeated forever". It's not hard to see that **prefix(S,p)** will never be a multiple of **9**, and **L(3)=**$\frac{1}{7}*100$, **L(4)=**$\frac{6}{7}*100$, all other **L(i)=0**.

Input

There will be multiple test cases. Each test case contains **23** integers: **M, X, Y, A(0), A(1), ..., A(9)**, **B(0), B(1), ..., B(9)**. **2 ≤ M ≤ 50, 0 ≤ X ≤ Y < M**, **0 ≤ A(i) ≤ B(i) ≤ 100.**

Output

For each test case, print case number and the maximal average value rounded to 8 decimal places. If no infinite stable integer can be found, print `"NO SOLUTION"` instead. Look at the output for sample input for details.

Sample Input

```
2  1  1  0  0  0  0  0  0  0  0  0  0 20 20 20 20 20 20 20 20 20 20
9  1  8  0  0  0  0  0  0  0  0  0  0  0  0  0 100 100  0  0  0  0  0
8  0  7  1  1  1  1  1  1  1  1  1  1  2  2  2  2  2  2  2  2  2  2
19 2  3  0  0  0  0  0  0  0  0  0  0 100 100 100 100 100 100 100 100 100 100
```

Output for Sample Input

```
Case 1: 5.00000000
Case 2: 3.85714286
Case 3: NO SOLUTION
Case 4: 1.00000000
```

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