Explanation of the Algorithm

My code creates a 3d string array that has dimensions: rows, columns, and heights. Heights are the numbers given in the board cells. Until the number given, for each cell, "Soil" is written to each height index. So, a 3d terrain is formed. Then "Water" is written to remaining heights until the max height, just like a rain fills remaining space with water, but since the terrain is floating, excess water must leak from edges. To do so I call the "leakTerrain" method for each edge cell in 3D that transforms the current cell to "Air" and recurses through all 8 directions until edges, "Air", or "Soil" is found (since water cannot leak through soils).

My lake finding algorithm starts upon finding a "Water" when iterating through each cell again, from left to right, up to bottom, and high to low. When a "Water" is found, it first labels the cell with lake label in 2D lake name array, counts to lower heights that contains "Water" to increase the lake volume and recurses through all 8 directions until edges, "Air", "Soil", or already labeled cell is found.

Example Input 1:

Modifications:

d3 d4 d5 e5 f5 g5 g4 g3 f3

e3

Example Output 1:

```
0 3 3 3 3 3 3
 1 3 1 2 3 1 2 3
 2 3 3 3 1 3 3 3
 3 3 3 3 3 3 3
 4 3 1 2 3 1 2 3
 5 3 3 3 3 3 3 3
 6 \ \ 3 \ \ 3 \ \ 3 \ \ 3 \ \ 3 \ \ 2
   a b c d e f g
Add stone 1 / 10 to coordinate:
0 3 3 3 3 3 3 3
 1 3 1 2 3 1 2 3
 2 3 3 3 1 3 3 3
 3 3 3 3 4 3 3
 4 3 1 2 3 1 2 3
 5 3 3 3 3 3 3 3
 6 3 3 3 3 3 2
   a b c d e f g
```

Add stone 2 / 10 to coordinate:

0	3	3	3	3	3	3	3
1	3	1	2	3	1	2	3
2	3	3	3	1	3	3	3
3	3	3	3	4	3	3	3
4	3	1	2	4	1	2	3
5	3	3	3	3	3	3	3
6	3	3	3	3	3	3	2
	а	b	С	d	е	f	g

Add stone 3 / 10 to coordinate:

0	3	3	3	3	3	3	3
1	3	1	2	3	1	2	3
2	3	3	3	1	3	3	3
3	3	3	3	4	3	3	3
4	3	1	2	4	1	2	3
5	3	3	3	4	3	3	3
6	3	3	3	3	3	3	2
	а	b	С	d	e	f	g

Add stone 4 / 10 to coordinate:

2 3 3 3 1 3 3 3 3 3 3 3 4 3 3 4 3 3 6 3 3 3 3 3 3	0	3	3	3	3	3	3	3
3 3 3 3 4 3 3 4 3 1 2 4 1 2 5 3 3 3 4 4 3 6 3 3 3 3 3 3	1	3	1	2	3	1	2	3
4 3 1 2 4 1 2 5 3 3 3 4 4 3 6 3 3 3 3 3 3	2	3	3	3	1	3	3	3
5 3 3 3 4 4 3 6 3 3 3 3 3 3 3	3	3	3	3	4	3	3	3
6 3 3 3 3 3 3	4	3	1	2	4	1	2	3
	5	3	3	3	4	4	3	3
abcdefg	6	3	3	3	3	3	3	2
		а	b	С	d	е	f	g

Add stone 5 / 10 to coordinate:

0	3	3	3	3	3	3	3
1	2	1	2	2	1	2	3

2	3	3	3	1	3	3	3			
3	3	3	3	4	3	3	3			
4	3	1	2	4	1	2	3			
5	3	3	3	4	4	4	3			
6	3	3	3	3	3	3	2			
	а	b	С	d	е	f	g			
Add s	add stone 6 / 10 to coordinate:									
0	3	3	3	3	3	3	3			
1	3	1	2	3	1	2	3			
2	3	3	3	1	3	3	3			

3 3 3 3 3 4 3 3 3 4 3 1 2 4 1 2 3 5 3 3 3 4 4 4 4 6 3 3 3 3 3 2

abcdefg

Add stone 7 / 10 to coordinate:

0 3 3 3 3 3 3 3 1 3 1 2 3 1 2 3 2 3 3 3 1 3 3 3 3 3 3 3 4 3 3 4 3 1 2 4 1 2 4 5 3 3 3 4 4 4 4 6 3 3 3 3 3 2 abcdefg

Add stone 8 / 10 to coordinate:

0 3 3 3 3 3 3 1 3 1 2 3 1 2 3 2 3 3 3 1 3 3 3 3 3 3 3 4 3 3 4 4 3 1 2 4 1 2 4 5 3 3 3 4 4 4 4 6 3 3 3 3 3 2 abcdefg

Add stone 9 / 10 to coordinate:

0 3 3 3 3 3 3 1 3 1 2 3 1 2 3 2 3 3 3 1 3 3 3 3 3 3 3 4 3 4 4 4 3 1 2 4 1 2 4 5 3 3 3 4 4 4 4 6 3 3 3 3 3 2 a b c d e f g

Add stone 10 / 10 to coordinate:

0 3 3 3 3 3 3 1 3 1 2 3 1 2 3 2 3 3 3 1 3 3 3 3 3 3 3 4 4 4 4 $4 \quad 3 \quad 1 \quad 2 \quad 4 \quad 1 \quad 2 \quad 4$ 5 3 3 3 4 4 4 4

```
6 3 3 3 3 3 3 2
a b c d e f g

-----
0 3 3 3 3 3 3 3 3 3
1 3 A A 3 A A 3
2 3 3 3 A 4 4 4 4
4 3 B B 4 C C 4
5 3 3 3 3 4 4 4 4
6 3 3 3 3 3 3 3 2
a b c d e f g

Final Score: 6.80
```

Example Input 2:

```
37 78
```

Modifications:

d3

d4

d5

e5

f5

g5

g4

g3

f3

Example Output 2:

 $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $65 \;\; 1 \;\; 0 \;\; 0 \;$ $69 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $77 \quad 1 \quad 0 \quad$

a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 1 / 10 to coordinate:

 $1 \;\; 1 \;\; 0 \;\; 0 \;\;$ $5 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 7 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 \\ \end{smallmatrix}$ $9 \;\; 1 \;\; 0 \;\; 0 \;\;$ $11 \quad 1 \quad 0 \quad$ 16 $\begin{smallmatrix} 1 & 0 & 1$ 30 31 1 0 $45 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$

 $53 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $55 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 59 60 $65 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 69 70 a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 2 / 10 to coordinate:

 $1 \;\; 1 \;\; 0 \;\; 0 \;\;$ $\begin{smallmatrix} 3 & 1 & 0 & 1 & 1 & 1 & 0$ $5 \;\; 1 \;\; 0 \;\; 0 \;\;$ $\begin{smallmatrix} 7 & 1 & 0$ 9 18 $\begin{smallmatrix} 1 & 0 & 1$

40 46 $51 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $55 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 56 $\begin{smallmatrix} 1 & 0 & 1$ $65 \;\; 1 \;\; 0 \;\; 0 \;$ $69 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $77 \;\; 1 \;\; 0 \;\; 0 \;$ a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 3 / 10 to coordinate:

 $1 \;\; 1 \;\; 0 \;\; 0 \;\;$ $\begin{smallmatrix} 3 & 1 & 0 & 1 & 1 & 1 & 0$ 6 $\begin{smallmatrix} 7 & 1 & 0$ 16 $19 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$

28 $51 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $57 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 58 $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 1 & 0 & 1$ $67 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $71 \quad 1 \quad 0 \quad$ a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 4 / 10 to coordinate:

 $9 \;\; 1 \;\; 0 \;\; 0 \;\;$ 10 1 15 20 1 $\begin{smallmatrix} 1 & 0 & 1$ 21 0 1 0 1 1 0 30 $\begin{smallmatrix} 1 & 0 & 1$ 39 41 1 $\begin{smallmatrix} 0 & 1 & 0$ 49 1 1 $53 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 1 & 0 & 1$ 59 1 1 $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 1 & 0 & 1$ 69 $71 \;\; 1 \;\; 0 \;\; 0 \;$ $73 \;\; 1 \;\; 0 \;\; 0 \;$

Add stone 5 / 10 to coordinate:

 $1 \;\; 1 \;\; 0 \;\; 0 \;\;$ $5 \;\; 1 \;\; 0 \;\; 1 \;\; 1 \;\; 2 \;\; 1 \;\; 1 \;\; 0 \;\; 0 \;\;$ $9 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $23 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 27 1 0 1 0 1 0 $55 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 1 0 $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$

 $63 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $69 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ a b c d e f g h i j k l m n o p q r s t u v w x y zaa abacadae afagahaiajak

Add stone 6 / 10 to coordinate:

 $\begin{smallmatrix} 7 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 \\ \end{smallmatrix}$ $\begin{smallmatrix} 1 & 0 & 1$ $17 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 19

 $53 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ 62 $65 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $67 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 1 & 0 & 1$ a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 7 / 10 to coordinate:

 $1 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $4 \;\; 1 \;\; 1 \;\; 1 \;\; 2 \;\; 1 \;\; 1 \;\; 2 \;\; 1 \;\;$ $5 \ 1 \ 0 \ 1 \ 1 \ 2 \ 1 \ 2 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 7 & 1 & 0$ $9 \;\; 1 \;\; 0 \;\; 0 \;\;$ 21 1 0 30

 $53 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $55 \quad 1 \quad 0 \quad$ $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $63 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $67 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $73 \quad 1 \quad 0 \quad$ a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 8 / 10 to coordinate:

 $1 \;\; 1 \;\; 0 \;\; 0 \;\;$ $\begin{smallmatrix} 7 & 1 & 0$ $9 \; 1 \; 0 \;$

								_								_																		_			
24																																					
25																																					1
26			1				1			1																		1							1		1
	1		1		1		1			0			1			0				0			1			0				0			1		1 1		1
28 29			1		1		1			1 0			1		1			0						0			1	1	1		1		1				1
30	_	-																																			1
31			1		1		1				1		1		1		1			0	1		1		1		1		1				1		1		1
32										1																										1	
	1			0	1	0	1	0	1	0	1		1		1		1			0	1	0	1	0	1		1		1	0	1		1	0	1		1
	1				1		1			1																				1					1		1
35							1			0			1					0										0							1		1
	1						1		1			1			1		1	1		1								1							1		1
37					1		1			0																	1			0					1		1
			1		1	1	1	1	1	1		1						1		1	1	1	1		1						1	1	1	1	1		1
39		0	1	0	1	0	1	0	1	0			1		1		1			0		0	1	0	1	0	1		1		1		1	0	1	0	1
40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
41	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
43	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
44	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
45	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
47	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
49	1	0	1	0	1	0	1	0	1	0					1	0	1	0	1	0	1	0						0							1	0	1
50							1		1			1					1		1	1	1	1						1							1		1
	1			0	1			0		0			1		1		1		1				1		1		1			0			1		1		1
52					1		1														1							1							1		1
53					1		1			0			1		1			0					1		1		1			0					1		1
																																				1	
	1				1		1			0			1		1		1			0	1		1		1			0							1		1
56 57	1									1 0	1		1		1								1			0	1		1				1		1	1 0	
58		0		0	1	0	1	0	1	1							1			0	1	0		0 1						1	1		1	0 1		1	1
59					1		1		1		1		1					0					1		1		1			0					1		1
60		1	1	1	1	1		1	1			1					1			1			1	1					1	1	1	1	1	1	1		1
	1						1			0																		0							1		1
62			1		1	1		1	1				1					1			1	1	1			1				1			1	1	1		1
	1			0	1			0		0			1		1			0		0				0			1		1		1		1		1		1
		1					1					1						1		1	1			1				1							1		1
65	1	0		0	1			0	1		1		1			0		0	1	0	1		1		1		1		1		1		1		1	0	1
66	1	1	1	1	1	1	1			1								1						1											1	1	1
67	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
68	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
69	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
																																				0	1
72																																				1	
73																																				0	1
74																																				1	
75																																					
76																																					
77																																			1	0	1
	a	α	С	a	е	ľ	g	n	1	j k	i I	m	r	1 (, t	J (4 1	ı S	t	u	V	W	X	У	Z	aa a	в а	c ad	ae i	ат а	g an	aı a	јак				

Add stone 9 / 10 to coordinate:

 $21 \quad 1 \quad 0 \quad$ $\begin{smallmatrix} 1 & 0 & 1$ $\begin{smallmatrix} 1 & 0 & 1$ $47 \quad 1 \quad 0 \quad$ $51 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $65 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ a b c d e f g h i j k l m n o p q r s t u v w x y zaaabacadaeafagahaiajak

Add stone 10 / 10 to coordinate: $1 \quad 1 \quad 0 \quad$ 6 $\begin{smallmatrix} 7 & 1 & 0$ 10 $\begin{smallmatrix} 1 & 0 & 1$ 11 1 0 1 15 16 20 35 36 39 40 $\begin{smallmatrix} 1 & 0 & 1$ 46 49 50 $51 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $\begin{smallmatrix} 1 & 0 & 1$ 59 $61 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1 \ 0 \ 1$ $65 \;\; 1 \;\; 0 \;\; 0 \;$

1 1 A 1 B 1 C 1 D 1 E 1 F 1 G 1 H 1 I 1 J 1 K 1 L 1 M 1 N 1 O 1 P 1 Q 1 R 1 3 1 S 1 1 2 1 2 T 1 U 1 V 1 W 1 X 1 Y 1 Z 1AA 1AB 1AC 1AD 1AE 1AF 1AG 1AH 1 5 1AI 1 1 2 1 2AJ 1AK 1AL 1AM 1AN 1AO 1AP 1AQ 1AR 1AS 1AT 1AU 1AV 1AW 1AX 1 7 1AY 1AZ 1BA 1BB 1BC 1BD 1BE 1BF 1BG 1BH 1BI 1BJ 1BK 1BL 1BM 1BN 1BO 1BP 1 9 1BQ 1BR 1BS 1BT 1BU 1BV 1BW 1BX 1BY 1BZ 1CA 1CB 1CC 1CD 1CE 1CF 1CG 1CH 1 11 1CI 1CJ 1CK 1CL 1CM 1CN 1CO 1CP 1CQ 1CR 1CS 1CT 1CU 1CV 1CW 1CX 1CY 1CZ 1 13 1 DA 1 DB 1 DC 1 DD 1 DE 1 DF 1 DG 1 DH 1 DI 1 DJ 1 DK 1 DL 1 DM 1 DN 1 DO 1 DP 1 DQ 1 DR 1 15 1DS 1DT 1DU 1DV 1DW 1DX 1DY 1DZ 1EA 1EB 1EC 1ED 1EE 1EF 1EG 1EH 1EI 1EJ 1 17 1EK 1EL 1EM 1EN 1EO 1EP 1EQ 1ER 1ES 1ET 1EU 1EV 1EW 1EX 1EY 1EZ 1FA 1FB 1 19 1FC 1FD 1FE 1FF 1FG 1FH 1FI 1FJ 1FK 1FL 1FM 1FN 1FO 1FP 1FQ 1FR 1FS 1FT 1 21 1FU 1FV 1FW 1FX 1FY 1FZ 1GA 1GB 1GC 1GD 1GE 1GF 1GG 1GH 1GI 1GJ 1GK 1GL 1 23 1GM 1GN 1GO 1GP 1GQ 1GR 1GS 1GT 1GU 1GV 1GW 1GX 1GY 1GZ 1HA 1HB 1HC 1HD 1 25 1 HE 1 HF 1 HG 1 HH 1 HI 1 HJ 1 HK 1 HL 1 HM 1 HN 1 HO 1 HP 1 HQ 1 HR 1 HS 1 HT 1 HU 1 HV 1 27 1HW 1HX 1HY 1HZ 1IA 1IB 1IC 1ID 1IE 1IF 1IG 1IH 1II 1IJ 1IK 1IL 1IM 1IN 1 29 1 IO 1 IP 1 IQ 1 IR 1 IS 1 IT 1 IU 1 IV 1 IW 1 IX 1 IY 1 IZ 1 JA 1 JB 1 JC 1 JD 1 JE 1 JF 1 31 1JG 1JH 1JI 1JK 1JL 1JM 1JN 1JO 1JP 1JQ 1JR 1JS 1JT 1JU 1JV 1JW 1JX 1 33 1JY 1JZ 1KA 1KB 1KC 1KD 1KE 1KF 1KG 1KH 1KI 1KJ 1KK 1KL 1KM 1KN 1KO 1KP 1 35 1 KQ 1 KR 1 KS 1 KT 1 KU 1 KV 1 KW 1 KX 1 KY 1 KZ 1 LA 1 LB 1 LC 1 LD 1 LE 1 LF 1 LG 1 LH 1 37 1LI 1LJ 1LK 1LL 1LM 1LN 1LO 1LP 1LQ 1LR 1LS 1LT 1LU 1LV 1LW 1LX 1LY 1LZ 1 39 1 MA 1 MB 1 MC 1 MD 1 ME 1 MF 1 MG 1 MH 1 MI 1 MJ 1 MK 1 ML 1 MM 1 MN 1 MO 1 MP 1 MQ 1 MR 1 41 1MS 1MT 1MU 1MV 1MW 1MX 1MY 1MZ 1NA 1NB 1NC 1ND 1NE 1NF 1NG 1NH 1NI 1NJ 1 43 1NK 1NL 1NM 1NN 1NO 1NP 1NQ 1NR 1NS 1NT 1NU 1NV 1NW 1NX 1NY 1NZ 1OA 1OB 1 45 1 OC 1 OD 1 OE 1 OF 1 OG 1 OH 1 OI 1 OJ 1 OK 1 OL 1 OM 1 ON 1 OO 1 OP 1 OQ 1 OR 1 OS 1 OT 1 47 1 OU 1 OV 1 OW 1 OX 1 OY 1 OZ 1 PA 1 PB 1 PC 1 PD 1 PE 1 PF 1 PG 1 PH 1 PI 1 PJ 1 PK 1 PL 1 49 1 PM 1 PN 1 PO 1 PP 1 PQ 1 PR 1 PS 1 PT 1 PU 1 PV 1 PW 1 PX 1 PY 1 PZ 1 QA 1 QB 1 QC 1 QD 1 51 1QE 1QF 1QG 1QH 1QI 1QJ 1QK 1QL 1QM 1QN 1QO 1QP 1QQ 1QR 1QS 1QT 1QU 1QV 1 53 1QW 1QX 1QY 1QZ 1RA 1RB 1RC 1RD 1RE 1RF 1RG 1RH 1RI 1RJ 1RK 1RL 1RM 1RN 1

```
55 1RO 1RP 1RQ 1RR 1RS 1RT 1RU 1RV 1RW 1RX 1RY 1RZ 1SA 1SB 1SC 1SD 1SE 1SF 1
57 1SG 1SH 1SI 1SJ 1SK 1SL 1SM 1SN 1SO 1SP 1SQ 1SR 1SS 1ST 1SU 1SV 1SW 1SX 1
59 1SY 1SZ 1TA 1TB 1TC 1TD 1TE 1TF 1TG 1TH 1TI 1TJ 1TK 1TL 1TM 1TN 1TO 1TP 1
61 1TQ 1TR 1TS 1TT 1TU 1TV 1TW 1TX 1TY 1TZ 1UA 1UB 1UC 1UD 1UE 1UF 1UG 1UH 1
63 1UI 1UJ 1UK 1UL 1UM 1UN 1UO 1UP 1UQ 1UR 1US 1UT 1UU 1UV 1UW 1UX 1UY 1UZ 1
65 1VA 1VB 1VC 1VD 1VE 1VF 1VG 1VH 1VI 1VJ 1VK 1VL 1VM 1VN 1VO 1VP 1VQ 1VR 1
67 1VS 1VT 1VU 1VV 1VW 1VX 1VY 1VZ 1WA 1WB 1WC 1WD 1WE 1WF 1WG 1WH 1WI 1WJ 1
69 1WK 1WL 1WM 1WN 1WO 1WP 1WQ 1WR 1WS 1WT 1WU 1WV 1WW 1WX 1WY 1WZ 1XA 1XB 1
71 1XC 1XD 1XE 1XF 1XG 1XH 1XI 1XJ 1XK 1XL 1XM 1XN 1XO 1XP 1XQ 1XR 1XS 1XT 1
73 1XU 1XV 1XW 1XX 1XY 1XZ 1YA 1YB 1YC 1YD 1YE 1YF 1YG 1YH 1YI 1YJ 1YK 1YL 1
75 1 YM 1 YN 1 YO 1 YP 1 YQ 1 YR 1 YS 1 YT 1 YU 1 YV 1 YW 1 YX 1 YY 1 YZ 1 ZA 1 ZB 1 ZC 1 ZD 1
 a b c d e f g h i j k l m n o p q r s t u v w x y zaa abacadae afagahaiajak
Final Score: 680.00
```

Example Input 3:

43

3566

4103

3332

Modifications:

a0

a1

a2 b0

. .

b1 b2

cΩ

c2

d0 d1

Example Output 3:

```
0 3 5 6 6
1 4 1 0 3
2 3 3 3 2
a b c d
```

Add stone 1 / 10 to coordinate:

0 4 5 6 6

```
1 4 1 0 3
 2 3 3 3 2
   a b c d
-----
Add stone 2 / 10 to coordinate:
 0 4 5 6 6
 1 5 1 0 3
 2 3 3 3 2
    a b c d
Add stone 3 / 10 to coordinate:
 0 4 5 6 6
 1 5 1 0 3
 2 4 3 3 2
   a b c d
-----
Add stone 4 / 10 to coordinate:
 0 4 6 6 6
 1 5 1 0 3
 2 4 3 3 2
    a b c d
Add stone 5 / 10 to coordinate:
 0 4 6 6 6
 1 5 2 0 3
 2 4 3 3 2
   a b c d
-----
Add stone 6 / 10 to coordinate:
 0 4 6 6 6
 1 5 2 0 3
 2 4 4 3 2
    a b c d
_____
Add stone 7 / 10 to coordinate:
 0 4 6 7 6
 1 5 2 0 3
 2 4 4 3 2
    a b c d
Add stone 8 / 10 to coordinate:
 0 4 6 7 6
 1 5 2 0 3
 2 4 4 4 2
   a b c d
Add stone 9 / 10 to coordinate:
 0 4 6 7 7
 1 5 2 0 3
 2 4 4 4 2
  abcd
Add stone 10 / 10 to coordinate:
```

0 4 6 7 7

1 5 2 0 4 2 4 4 4 2 a b c d

0 4 6 7 7 1 5 2 A 4

2 4 4 4 2 a b c d

Final Score: 1.41