

Problem B

Abhimanyu

Time limit: 1 second

In thirteenth day war of Kurukshetra War (Bharatayuddha), the Kauravas challenge the Pandavas to break a circular battle formation known as the Chakravyuha. The Pandavas accept the challenge since they know that the knowledge of how to defeat such a formation is known to Krishna and Arjuna. However, on that day, Krishna and Arjuna are dragged into fighting a war on another front with the Samsaptakas. Since the Pandavas have accepted the challenge already, Abhimanyu decided to attempt the challenge. Abhimanyu used his skills to successfully break into the formation.

PANDAVAS BASE CAMP

O	O	O	O	O	O	O
O	#	.	#	#	#	O
.	#	O	.	O	#	.
.	.	O	X	O	#	O
O	#	O	O	O	.	O
O	#	#	.	#	#	O
O	.	O	O	O	O	O

CHAKRAVYUHA FORMATION

KAURAVAS BASE CAMP

Explanation :

'O' is represent the soldier that always move to right (clockwise direction rotation).
'#' is represent the soldier that always move to left (counter-clockwise direction rotation)
And 'X' is represent the location trapped Pandavas.

Abhimanyu was trapped in the center of formation. There's two type of soldier (#) and (O). Every type of soldier always in run in their layer (O always on the outermost layer and deepest layer, # always in the middle of layers). Abhimanyu can move to every empty box (represent by dot) in every layer or do nothing when he can't move (but steps still count). Soldier always move after Abhimanyu choose his step, between (move left, up, right, down, or do nothing). Soldiers will push Abhimanyu if Abhimanyu block their move.

Abhimanyu learnt the art of breaking into the Chakravyuha when he was in Subhadra's womb. It was then Arjuna was narrating the art of breaking into Chakravyuha to Subhadra. But he did not know how to destroy the formation once he was inside, as Subhadra fell asleep while listening to the story and (Abhimanyu in her womb) could learn only half of the technique. This is the reason why he was only able to enter/ break and not come out of the Chakravyuha.

As soon as Abhimanyu entered the formation. Jayadrath, the ruler of Sindh blocked the other Pandavas, so that Abhimanyu was left alone Inside the Chakravyuha Please help the trapped Abhimanyu to go outside and back to his base camp.

Input :

7x 7 array of chars that represent trapped Ahimanyu and Kauravas Army position.
(position is guarantee there's a way to go to north)

X = Abhimanyu trapped position

O = Kauravas Army, that always move to clockwise direction each step

= Kauravas Army, that always move to counter-clockwise direction each step

Output :

Single line containing the number of minimum step for Abimanyu to Pandawa's Region
Output $1 < \text{Step} < 1000$.

Input example 1:

```
0 0 0 0 0 0 0
0 # . # # # 0
. # 0 . 0 # .
. . 0 X 0 # 0
0 # 0 0 0 . 0
0 # # . # # 0
0 . 0 0 0 0 0
```

Output example 1:

9

Input example 2:

```
0 0 0 0 0 0 0
0 # . # # # 0
. # 0 . 0 # .
0 . 0 X 0 # 0
0 # 0 0 0 . 0
0 # . . . # 0
0 . 0 0 0 0 0
```

Output example 2:

9

Explanation :

Count minimum step of Abhimanyu that he needed to go back to North (to Pandavas Base Camp).

This is the detail Example 1:

O	O	O	O	O	O	O	O				
O	#		#	#	#	O					
	#	O	X	O	#			S			
		O		O	#	O		T			
O	#	O	O	O		O		E			
O	#	#		#	#	O		P			
O		O	O	O	O	O		1			
O	O	O	O	O	O	O					
		#	#	#	#	O					
	#	O	O	X	#	O					
O	#	O		O							
O		O	O	O	#	O					
O	#	#	#		#	O					
O	O	O	O	O	O	O					

O	O	O	O	O	O	O					
	#	#	#	#	#	O					
	#	O	O	X	#	O		S			
O	#	O		O				T			
O		O	O	O	#	O		E			
O	#	#	#		#	O		P			
O	O	O	O	O	O	O		2			
O	O	O	O	O	O	O					
	#	#	#	#	#	O					
O		O	O	O		O					
O	#	O		X	#	O					
O	#	O	O	O	#						
	#	#	#			O					
O	O	O	O	O	O	O					

	O	O	O	O	O	O					
	#	#	#	#	#	O					
O		O	O	O		O		S			
O	#	O		X	#	O		T			
O	#	O	O	O	#			E			
	#	#	#		O			P			
O	O	O	O	O	O	O		3			
	O	O	O	O	O						
O	#	#	#	#		O					
O	#	O	O	O	#	O					
O		O		O	#	O					
	#	O	O	X		O					
O	#		#	#	#						
O	O	O	O	O	O	O					

		O	O	O	O	O					
O	#	#	#	#		O					
O	#	O	O	O	#	O		S			
O		O		O	#	O		T			
	#	O	O		X	O		E			
O	#		#	#	#			P			
O	O	O	O	O	O	O		4			
O			O	O	O	O					
O	#	#	#		#	O					
O	#	O	O	O		O					
	#	O		O	X	O					
O		O		O	#	O					
O	#	#		#	#	O					
O	O	O	O	O	O	O					

O				O	O	O					
O	#	#	#		#	O					
O	#	O	O	O	#	O		S			
	#	O		O	X	O		T			
O		O		O	O	#	O	E			
O	#	#		#	#	O		P			
O	O	O	O	O	O	O		5			
O	O			O	O	O					
O	#	#		#	#	O					
	#	O	O	O	X	O					
O	#	O		O	#	O					
O	#		O	O	#	O					
O	#	#		#		O					
O	O	O	O	O	O	O					

O	O			O	O	O					
O	#	#		#	#	O					
	#	O	O	O	X	O		S			
O	#	O		O	#	O		T			
O	#		O	O	#	O		E			
O		#	#		#	O		P			
O	O	O	O	O	O	O		6			
O	O	O			O	O					
	#	#	#	X	O						
O	#	O	O	O	#	O					
O	#		O	O	#	O					
O	#	O	O	O	#	O					
O	#		#	#		O					
O	O	O	O	O	O	O					

O	O	O			O	O					
	#		#	#	X	O					
O	#	O	O	O	#	O		S			
O	#		O	O	#	O		T			
O	#	O	O	O	#	O		E			
O	#		#	#		O		P			
O	O	O	O	O	O	O		7			
	O	O	O			O					
O		#	#	X	#	O					
O	#		O	O	#	O					
O	#	O		O	#	O					
O	#	O	O	O		O					
O	#	#		#	#	O					
O	O	O	O	O	O	O					

	O	O	O	X		O					
O		#	#		#	O					
O	#		O	O	#	O		S			
O	#	O	O		O	O		T			
O	#	#		#	#	O		E			
O	O	O		O	O	O		P			
								8			
O		O	O	O	X						
O	#	#		#	#	O					
O		O		O	#	O					
O	#	O		O		O					
O	#	O	O	O	#	O					
O	#	#	#		#	O					
O	O	O	O	O	O	O					

								STEP 9			
								HE STEP OUTSIDE TO NORTH AND SAVED			

This is the Detail Example 2 :

O	O	O	O	O	O	O		
O	#		#	#	#	O		
	#	O	X	O	#		S	
O	O	O	O	O	#	O	T	
O	#	O	O	O	O	O	E	
O	#				#	O	P	
O		O	O	O	O	O	1	
O	O	O	O	O	O	O		
	#	#	#	#	#	O		
O	#	O	O	X	#	O		
O	#	O		O				
O		O	O	O	#	O		
O	#	#						
O	O	O	O	O	O	O		

O	O	O	O	O	O	O		
		#	#	#	#	O		
O	#	O	O	X	#	O	S	
O	#	O		O			T	
O		O	O	O	#	O	E	
O	#	#				O	P	
	O	O	O	O	O	O	2	
	O	O	O	O	O	O		
O	#	#	#	#	#	O		
O		O	O	O		O		
O	#	O		X	#	O		
O	#	O	O	O				
	#	#				O		
O	O	O	O	O	O	O		

	O	O	O	O	O	O		
O	#	#	#	#	#	O		
O		O	O	O		O	S	
O	#	O		X	#	O	T	
O	#	O	O	O			E	
	#	#				O	P	
O	O	O	O	O	O	O	3	
O		O	O	O	O	O		
O	#	#	#	#	#	O		
O	#	O	O	O	#	O		
O		O		O		O		
	#	O	O	X		O		
O	#		#	#				
O	O	O	O	O	O	O		

O		O	O	O	O	O		
O	#	#	#	#	#	O		
O	#	O	O	O	#	O	S	
O		O		O		O	T	
	#	O	O		X	O	E	
O	#		#	#			P	
O	O	O	O	O	O	O	4	
	O	O	O	O	O	O		
O	#	#	#	#	#	O		
O	#	O	O	O		O		
	#	O		O	X	O		
O		O		O				
O	#	#	#	#	#	O		
O	O	O	O	O	O			

O	O		O	O	O	O		
O	#	#	#		#	O		
O	#	O	O	O		O	S	
	#	O		O	X	O	T	
O		O		O		O	E	
O	#	#		#	#	O	P	
O	O	O	O	O	O		5	
O	O	O		O	O	O		
O	#	#		#		O		
#	O	O	O	X		O		
O	#	O		O		O		
O	#		O	O	#	O		
O		#	#		#	O		
O	O	O	O	O	O	O		

O	O	O		O	O	O		
	#	#		#		O		
O	#	O	O	O	X	O	S	
O	#	O		O		O	T	
O	#		O	O	#	O	E	
O		#	#		#	O	P	
O	O	O	O	O	O	O	6	
	O	O	O		O	O		
O	#		#		X	O		
O	#	O	O	O		O		
O	#			O	#	O		
O	#	O	O	O	#	O		
O	#		#	#		O		
O	O	O	O		O	O		

	O	O	O		O	O		
O	#		#		X	O		
O	#	O	O	O		O	S	
O	#		O	O	#	O	T	
O	#	O	O	O	#	O	E	
O	#		#	#		O	P	
O	O	O	O		O	O	7	
O		O	O	O		O		
O	#			O	X	O		
O	#		O	O	#	O		
O	#	O	O	O	#	O		
O	#	O	O	O		O		
O	#	#	#	#	#	O		
O	O	O	O	O	O	O		

O		O	O	O	X	O		
O	#					O		
O	#		O	O	#	O	S	
O	#	O	O	O		O	T	
O	#	O	O	O		O	E	
O	#	#	#	#	#	O	P	
O	O	O	O	O	O	O	8	
	O	O		O	O	X		
O	#				#	O		
O		O	O	#		O		
O	#	O	O	O		O		
O	#	O	O	O	#	O		
O	#	#	#		#	O		
O	O	O	O	O	O	O		

STEP 9
HE STEP OUTSIDE TO NORTH AND SAVED