

3005 Necklaces

In the Macmahara Desert, a group of explorers have found the remains of an interesting tribe of people, the Yacms. A number of necklaces have been found which, according to local history, the Yacms used to represent numbers. Each necklace consists of a continuous wire on which are strung a number of beads. As the beads are of only two colours (black and white), it is clear that the necklaces were used to represent binary numbers.

Unfortunately, nobody knows whether the black represented 1 and the white 0 or the other way around. It is also not clear where the number started, or even in which direction it was to be read!

A simple necklace like the one below could represent several numbers.

	Black as 1		White as 1	
	Read clockwise	Read anticlockwise	Read clockwise	Read anticlockwise
	BBBW = 14	WBBB = 7	BBBW = 1	WBBB = 8
	BBWB = 13	BBBW = 14	BBWB = 2	BBBW = 1
	BWBB = 11	BBWB = 13	BWBB = 4	BBWB = 2
	WBBB = 7	BWBB = 11	WBBB = 8	BWBB = 4

What we can say is that the lowest number it can represent is 1, the highest 14. In this simple case the lowest and the highest numbers are the same whether we read the necklace clockwise or anticlockwise. However, there are complex cases when the two reading directions also give different lowest and highest numbers. As you can verify, the last necklace listed in the sample input is indeed such a case.

Your task is to find out the lowest number and the highest number that a given necklace could possibly represent.

Input

Input will consist of a number of lines, each representing one necklace.

Each necklace will be represented by a sequence of 1 to 30 letters, upper case 'B' to represent a black bead, upper case 'W' a white bead.

The word 'END' will mark the end of input.

Output

For each input line, output 2 integers (in base 10), separated by a single space. The first is the lowest number that the necklace could represent, the second the highest number.

Sample Input

B

BW
BBWB
BBBW
WBBWB
BBWBWW
END

Sample Output

0 1
1 2
1 14
1 14
5 26
11 116