

Problem A

ALBERT'S ABILITY

File name: A.{java,c,cpp}

You've built a keyboard for your talented pet elephant, Albert, who uses his trunk to type letters and his right foot to hit the space bar. You've laid it out in the following form.

Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	
Z	X	C	V	B	N	M			

Space

The layout of the keyboard you've built for Albert.

It takes Albert 2 seconds to move his trunk from one key to a neighboring key (horizontally or vertically only), 1 second to press a key, and 5 seconds to press the space bar using his foot. Albert starts with his trunk over the 'E' key for each test case.

Given a string consisting only of uppercase letters A-Z and spaces, output how many seconds it takes the elephant to key in the string.

Program Input

The first line of input is the number of test cases T ($1 \leq T \leq 100$). The following lines will contain the test cases, one per line. No line will contain more than 100 characters.

Program Output

For each test case, output on a new line how many seconds it takes Albert to type the input.

Sample Input & Output

INPUT	OUTPUT
3	37
HELLO	161
E IS FOR ELEPHANT	338
KNOCK ON THE SKY AND LISTEN TO THE SOUND	