
1. Base Three

Program Name: Base3.java

Input File: base3.dat

Geek High School's local math club, Mu Alpha Theta, has decided to use a code for numbers used by their members. The code they have adopted will use M, A, and O for their "digits". The decimal counterparts of these digits are 1, -1, and 0 respectively. Each place value of a digit in a number is three times larger than the digit to its right with the rightmost place value being a one. For example, the Geek number MAO would be equivalent to 6 since $9*1 + 3*(-1) + 1*0 = 6$.

Input

Each of line of input will contain a single Geek number.

Output

For each Geek number, you will print its base 10 equivalent on a single line.

Example Input File

```
MAO
MMAAOO
MAOMAO
OMOAO
MAMA
```

Example Output to Screen

```
6
288
168
24
20
```