
Code with cipher 3 reversed

X19883_en

The code with *cipher 3 reversed* of a non-negative integer is to code the number in base 3 and revert the coding. In order to make it even more cryptic, you will change the digits of the resulting number according to the following relation: $0 \rightarrow '-'$, $1 \rightarrow '+'$, $2 \rightarrow '*'$.

The code for a negative integer $n < 0$ starts with a ':' which is followed by the coding with cipher 3 reversed of $-n$.

Examples

- 2077 is represented in base 3 as 2211221 (reverted as 1221122) and coded as +**++**
- -2077 is coded as :+**++**
- 0 is represented in base 3 as 0 (reverted as 0) and coded as -
- 31 is represented in base 3 as 1011 (reverted as 1101) and coded as ++-+
- 257 is represented in base 3 as 100112 (reverted as 211001) and coded as *++--+
- 5766 is represented in base 3 as 21220120 (reverted as 02102212) and coded as -*+-*+*

Write a program to code integers in cipher 3 reverse coding according to the described algorithm.

Input

The input is a sequence of integer numbers.

Output

The output is the code in cipher 3 reversed of each number.

Follow the format of the examples.

Sample input 1

```
2077
-2077
0
31
257
5766
```

Sample output 1

```
+**++**
:~**++**
-
++-+
*++--+
-*+~**+*
```

Problem information

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