Problem 1 – TRES4 Numbers

The **largest planet** in the known universe is **TRES4**. It is located in the **constellation Hercules**. For some strange coincidence the **TRES4nians** (the creatures that live on TRES4) use some of the **letters** in the **Latin alphabet** in their **numeral system**. What is even more surprising the digits in this numeral system, called **TRESNUM4,** also contain some **operators** that we use in **programming here on Earth**. All digits in **TRESNUM4** with their decimal representations are:

LON+	0
VK-	1
*ACAD	2
^MIM	3
ERIK|	4
SEY&	5
EMY>>	6
/TEL	7
<<DON	8

A long time ago, Christopher, an eleven years old kid from Arizona, USA, who was extremely good at physics and astronomy, sent a message with the **integer coordinates of the Sun and the Earth** to the **constellation Hercules**. Earlier today the message has been received by the **TRES4nians**. The problem is they don't know how to **convert numbers from decimal** numeral system **to numbers in TRESNUM4** numeral system and you, like the wisest TRES4nian, must help them by writing a computer program.

Input

The input data consists of a single line – the integer number sent to the TRES4 planet.

The input data will always be valid and in the described format. There is no need to check it explicitly.

Output

The output data consists of a single line holding the TRESNUM4 number representation of the integer number.

Constraints

- The input number will be between **0** and **18 000 000 000 000 000 000**.
- Allowed working time for your program: **0.1 seconds**.
- Allowed memory: **16 MB**.

Examples

Input	Output
4	ERIK|

Input	Output
154	VK-<<DONVK-

Input	Output
5451	/TELERIK|*ACADEMY>>

Input	Output
891672	VK-EMY>>LON+<<DONVK-*ACADEMY>>