## 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** |  | **Input** | **Output** |
| 4 | ERIK| | 154 | VK-<<DONVK- |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |
| 5451 | /TELERIK|\*ACADEMY>> | 891672 | VK-EMY>>LON+<<DONVK-\*ACADEMY>> |