## Problem 4 – Magic Strings

You are given a number **diff**. Write a program to **generate all sequences of 8 letters**, each from the set { '**s**', '**n**', '**k**', '**p**' }, such that the weight of the first 4 letters differs from the weight of the second 4 letters exactly by **diff**. These sequences are called “**magic strings**”. Print them in alphabetical order.

The **weight of a single letter** is calculated as follows: weight('**s**') = **3**; weight('**n**') = **4**; weight('**k**') = **1**; weight('**p**') = **5**. The **weight of a sequence** of 4 letters is the calculated as sum of the weights of these 4 individual letters.

### Input

* The input data should be read from the console.
* The number **diff** stays at the first line.

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

### Output

The output should be printed on the console as a sequence of strings in **alphabetical order**. Each string should stay on a separate line. In case no magic strings exist, print “**No**”.

### Constraints

* The number **diff** will be an **integer** number in the range [0…100].
* Allowed working time for your program: 0.25 seconds.
* Allowed memory: 16 MB.

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 16 | kkkkpppp  ppppkkkk | weight('kkkk') = 4; weight('pppp') = 20; diff = 16  weight('pppp') = 4; weight('kkkk') = 20; diff = 16 |

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 15 | kkkknppp  kkkkpnpp  kkkkppnp  kkkkpppn  npppkkkk  pnppkkkk  ppnpkkkk  pppnkkkk | weight('kkkk') = 4; weight('nppp') = 19; diff = 15  weight('kkkk') = 4; weight('pnpp') = 19; diff = 15  weight('kkkk') = 4; weight('ppnp') = 19; diff = 15  weight('kkkk') = 4; weight('pppn') = 19; diff = 15  weight('nppp') = 19; weight('kkkk') = 4; diff = 15  weight('pnpp') = 19; weight('kkkk') = 4; diff = 15  weight('ppnp') = 19; weight('kkkk') = 4; diff = 15  weight('pppn') = 19; weight('kkkk') = 4; diff = 15 |

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 20 | No | No magic strings match the specified difference diff |