ICC311 ESTRUCTURAS DE DATOS
Departamento de Ciencias de la Computación e Informática
Semestre I - 2019

Atypical Riddle

Batman is an **atypical** "superhero". Unlike Spider-man, Batman has no special powers (unless you count being *filthy rich* a superpower). That said, he is, for better or worse, greatly respected for being a crime-fighter by his many fans. Despite his dour demeanor, Batman at times displays moments of humor and periodically manifests his modest intellect.

Find all the pairs of `5`-digit numbers that use the digits `0` through `9` once each, such that the first number divided by the second is equal to some integer `N`, where `N` is between `2` and `100` (inclusive).

That is, given the digits `0, 1, 2, 3, 4, 5, 6, 7, 8, 9` and a number `N`, find all permutations of these digits such that:

```
abcde / fghij = N
```

where each letter represents a different digit. The first digit of one of the numerals is allowed to be `0`.

Because Batman lacks any significant superpower (besides money), he begs that you help him defeat the Riddler by using your programming superpowers.

Input

Each line of input consists of a valid integer `N`. An input of `0` terminates the program (no output should be displayed for it).

```
61

62

0
```

Output

The program should display **ALL** pairs of numerals that match the description above. The numerators should be sorted by increasing numerator and denominator and displayed in the following format:

```
XXXXX / XXXXX = N

XXXXX / XXXXX = N

...
```

If there are no pairs of numerals satisfying the atypical division condition, then the program should display: "There are no solutions for N".

Separate the output for two different values of `N` by a blank line.

```
There are no solutions for 61.


79546 / 01283 = 62

94736 / 01528 = 62
```

Referencias

Problema propuesto por el profesor Peter Bui, Dotre Dame University, publicado 2018.