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The Virtual Learning Environment for Computer Programming

## P0012. Diabolical numbers

P79123_en
We say that a number is diabolical if it is divisible for the double of the sum of its digits in basis 4. Your task is to write a program that, given a sequence of integers strictly positive finished in -1 , counts how many of them are diabolical.
Your program must include and use the function
bool is_diabolical (int $n$ );
that indicates if an integer n strictly positive is diabolical or is not.
These are some instances:

| $n$ | 1 | 4 | 6 | 17 | 20 | 23 | 28 | 140 | 255 | 999999972 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| $n$ in basis 4 | 1 | 10 | 12 | 101 | 110 | 113 | 130 | 2030 | 3333 | 323212230213210 |
| sum of the digits | 1 | 1 | 3 | 2 | 2 | 5 | 4 | 5 | 12 | 27 |
| diabolical | No | Yes | Yes | No | Yes | No | No | Yes | No | Yes |

## Input

The input consists of a sequence of integers strictly positive finished in -1-

## Output

Your program must print the quantity of diabolical numbers of the sequence, with six digits. (The inputs will always have less than a million diabolical numbers.)

```
Sample input 1 Sample output 1
-1
```


## Sample input 2

```
20-1
```


## Sample output 1 <br> 000000

## Sample input 3

| 17 | 4 | 6 | 20 | 20 | 23 | 140 | 28 | 255 | 999999972 | 1 | 2 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |$-000006$

## Sample input 4

$\begin{array}{ll}4 & 4\end{array}$ 444444444-1
Sample output 4
000012

## Problem information

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