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
```
-1
```
Sample output 1
```
000000
```

Sample input 2
```
20 -1
```
Sample output 2
```
000001
```

Sample input 3
```
17 4 6 20 20 23 140 28 255 999999972 1 2 -1
```
Sample output 3
```
000006
```

Sample input 4
```
4 4 4 4 4 4 4 4 4 4 4 4 -1
```
Sample output 4
```
000012
```

Problem information

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