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

```c
bool is_diabolical (int n);
```

that indicates if an integer $n$ strictly positive is diabolical or is not.

These are some instances:

<table>
<thead>
<tr>
<th>$n$</th>
<th>1</th>
<th>4</th>
<th>6</th>
<th>17</th>
<th>20</th>
<th>23</th>
<th>28</th>
<th>140</th>
<th>255</th>
<th>999999972</th>
</tr>
</thead>
<tbody>
<tr>
<td>$n$ in basis 4</td>
<td>1</td>
<td>10</td>
<td>12</td>
<td>101</td>
<td>110</td>
<td>113</td>
<td>130</td>
<td>2030</td>
<td>3333</td>
<td>323212230213210</td>
</tr>
<tr>
<td>sum of the digits</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>diabolical</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**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
```

**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**

Author : Professorat de P1  
Translator : Carlos Molina  
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