Base Sums

Given three values $n$, $a$, and $b$, find the smallest $m > n$ such that the sum of the digits of $m$ in base $a$ is the same as the sum of digits of $m$ in base $b$.

Input

Each input will consist of a single test case. Note that your program may be run multiple times on different inputs. There will be a single line of input, with three integers, $n$ ($0 \leq n \leq 10^{16}$), $a$ and $b$ ($2 \leq a < b \leq 36$), all of which will be in base $10$.

Output

Output a single integer, $m$, which is the smallest number greater than $n$ such that the sum of its digits in base $a$ is the same as the sum of its digits in base $b$. Output $m$ in base $10$.

Sample Input

<table>
<thead>
<tr>
<th>Sample Input</th>
<th>Sample Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>66 10 16</td>
<td>144</td>
</tr>
<tr>
<td>24 4 15</td>
<td>90</td>
</tr>
<tr>
<td>9358385 11 32</td>
<td>9437362</td>
</tr>
</tbody>
</table>