RARE MAPS FOR CORRECTORS

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In "Rare Maps For Collectors" in the November Word Ways, I presented a mapping between integers and letters for producing "perfect" German number names. However, Hans Haevermann in Colloquy has questioned my German spelling. He is right to do so; I have confused German und with Dutch en, to produce nonsensical bilingual compounds such as einezwanzig instead of einundzwanzig.

By coincidence, Ian Stewart, writing in Mathematical Recreations in the March 1994 Scientific American, has independently produced a mapping of his own for the German number names from 1 up to 29 (see below). Like me, Stewart deliberately elects to treat u and unlaute ü as the same. However, he concludes his column by speculating whether the mapping could be extended to include "dreizig", which would automatically entail all the number names up to 39. I am relieved to note that Stewart's German is as unreliable as my own: it should be dreissig. The answer to his question is not only yes, but it is possible to include vierzig, thus extending the list up to 49. Among infinitely many solutions, that one using the least highest absolute value (22 as opposed to Stewart's 33) has been identified by computer:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>L</th>
<th>N</th>
<th>O</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>X</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewart</td>
<td>-10</td>
<td>7-18</td>
<td>9</td>
<td>-1</td>
<td>-2</td>
<td>33</td>
<td>17</td>
<td>-3</td>
<td>14</td>
<td>1</td>
<td>-6</td>
<td>16</td>
<td>4</td>
<td>19</td>
<td>8</td>
<td>-8</td>
<td>13</td>
<td>-7</td>
</tr>
<tr>
<td>Sallows</td>
<td>-1</td>
<td>-4</td>
<td>-5</td>
<td>-9</td>
<td>10</td>
<td>-2</td>
<td>22</td>
<td>-7</td>
<td>-3</td>
<td>3-10</td>
<td>16</td>
<td>5</td>
<td>42</td>
<td>19</td>
<td>-8</td>
<td>22</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

e+i+n+s =10-3-10+4 = 1 s+i+e+b+z+e+h+n = 17
z+w+e+i =17-22+10-3 = 2 a+c+h+t+z+e+h+n = 18
d+r+e+i =-9+5+10-3 = 3 n+e+u+n+z+e+h+n = 19
v+i+e+r =-8+3+10+5 = 4 z+w+a+n+z+i+g = 20
f+i+n+f =-2+19+10-2 = 5 e+i+n+u+n+d+z+w+a+n+z+i+g = 21
s+e+c+h+s = 4+10-5-7+4 = 6
s+i+e+b+n+n = 4-3+10-4+10-10 = 7
a+c+h+t =-1-5-7+21 = 8 d+r+e+i+s+s+i+g = 30
n+e+u+n =-10+10+19-10 = 9 e+i+n+u+n+d+d+r+e+i+s+s+i+g = 31
z+e+h+n = 17+10-7-10 = 10
e+l+f = 10+3-2 = 11
z+w+ö+l+f = 17-22+16+3-2 = 12 v+i+e+r+z+i+g = 40
d+r+e+i+z+e+h+n = 3+10 = 13 e+i+n+u+n+d+v+i+e+r+z+i+g = 41
v+i+e+r+z+e+h+n = 4+10 = 14
f+i+n+f+z+e+h+n = 5+10 = 15
s+e+c+h+s+z+e+h+n = 6+10 = 16 n+e+u+n+u+n+d+v+i+e+r+z+i+g = 49

Because vierzig is 40 and vier is 4, z+i+g must equal 36. Therefore, funfzig must always be 5+36, or 41, not 50.