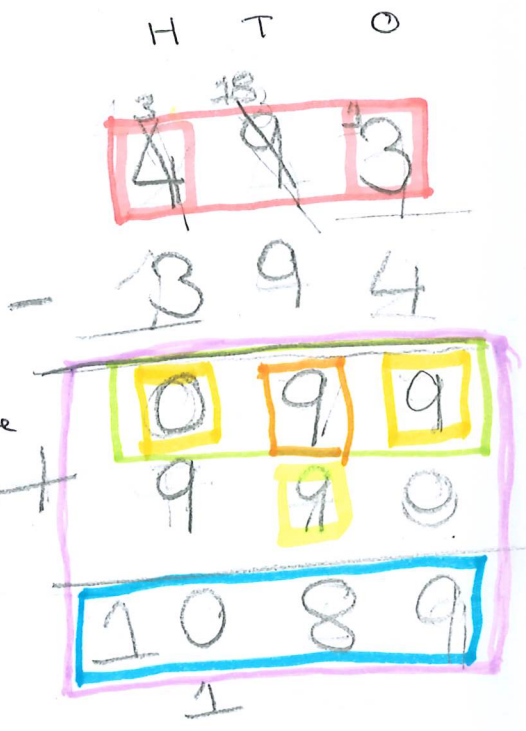


I've noticed that all **3 digits** have to be different. And that **the last digit has to be smaller than the first**, otherwise it goes into negatives. I've also noticed that after subtracting the **middle digit is always 9** and **the other digits add up to make 9**. Therefore, **All 3 digits add up to make 9**, 18. Also at the end of the equation **the answer is always 1089** and the digits for that also **add up to 18**. The last 3 numbers in the equation are all multiples of 3, 9 and 11.

3 digits have to be **DIFFERENT!**

The 3 digits have to be different - for this equation to work - because if one or more of the digits were the same the resulting answer is either negative or 0. unless, the starting number is something like 442. Because if the numbers which are the same are larger than the other one and the first two digits (the ones in the hundreds & tens column) are the same then it will work.



The middle DIGIT is always 9.

This is because the second number (the reversed one) must be smaller than first one, otherwise the answer will not be 1089. This means the numbers in the ones column must be carried. Therefore, the tens column, which was previously the same will also need to be carried. No matter which 3-digit number you pick (as long as it fits the criteria) the tens column answer will always be 9.

Here are 3 more examples:

$$\begin{array}{r}
 678 \\
 - 197 \\
 \hline
 594 \\
 495 \\
 \hline
 1089
 \end{array}$$

$$\begin{array}{r}
 784 \\
 478 \\
 \hline
 396 \\
 693 \\
 \hline
 1089
 \end{array}$$

$$\begin{array}{r}
 893 \\
 369 \\
 \hline
 594 \\
 495 \\
 \hline
 1089
 \end{array}$$

Have a go!
What do you find?