

Silver Challenge

The rule is that it works as long as the three-digit number has different digits.

If you found exceptions to this rule, then you might have done the following:

But I ended with 198 not 1089 ... !

This happens if you pick a number like 546.

546 goes like this:

$$645 - 546 = 99,$$

then $99 + 99 = 198$.

BUT if you use the subtraction answer of 99 as 099, you will get:

$$990 - 099 = 891, \text{ and } 891 + 198 = 1089$$

If you don't pick three different digits, then this might happen:

$$343 - 343 = 0, 0 + 0 = 0$$