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A problem was presented where any three digit number with the hundreds and the ones digit being different numbers would always end up as 10089 through this process: Take the number chosen and flip the hundreds and the ones digit and subtract the lower number from the higher number. Then take the difference (but if the difference is 99, treat it as 099) and switch its digits again. Add this to the difference and the answer is always 10089. For example, if someone picked 987, he would do 987-789=198. Then, he would take 198 and do 198+891 = 10089. To find out why this happened, an algebraic solution was attempted. With x representing the hundreds digit, y representing the tens digit, and z representing the ones digit, the number picked was represented as (100x+10y+z). The flipped version of the number picked would be (100z+10y+x). The difference between these two would be 99x-99z or 99(x-z). The difference will always be a multiple of 99. This would imply by the last step, the addends must be the first ten multiples of 99. 99, 198, 297, 396, 495, 594, 693, 792, 891, or 990. The flipped version of any difference by the last step will always equal 10089.