# Wonderful 1089!

1. Write a three-digit number.
2. Reverse the digits.
3. Subtract the smaller number from the larger using column subtraction.
4. Reverse the digits.
5. Add the two numbers using column addition.
6. Repeat this using seven different starting numbers, all three-digit numbers.

Can you find starting numbers that do not give you 1089 as an answer? (There are some.)

Can you explain what is happening...?

275   572

$$
\begin{array}{r}
{}^{4}\cancel{5}{}^{16}\cancel{7}{}^{12}\cancel{2} \\
-\ 275 \\
\hline
297 \\
\end{array}
$$

$$
\begin{array}{r}
792 \\
+\ 297 \\
\hline
\phantom{0000} \\
\hline
\end{array}
$$