

Alphanumerics

In the following puzzles, each letter represents one of the decimal digits (1-9). The code changes from one puzzle to the next.

Trial and error will work on the first two, but it might be tedious in the Bonus. Try using some logical reasoning on all three, and tell us what you learn.

1. Switcheroo

$$\begin{array}{r} MA \\ + A \\ \hline AM \end{array}$$

2. Double Duty

$$D.D + DD = D.D * DD$$

Bonus: Reversal of Four-tune

$$\begin{array}{r} RSTU \\ \times 4 \\ \hline UTSR \end{array}$$

Solutions

1. Switcheroo

$$89 + 9 = 98$$

2. Double Duty

$D = 1$, since $1.1 + 11 = 1.1 * 11$. Also $D = 0$ is ruled out by the instructions.

3. Reversal of Four-tune

$2178 * 4 = 8712$. There are some interesting extensions of this problem.