

Puzzle of the Week

Letter Substitutions – 3

Rules:

1. A letter represents a digit from 0 to 9, and has the same value throughout a single puzzle.
2. No number can start with the digit 0.
3. Within a puzzle, different letters must have different values.

$$\begin{array}{r} 8 \\ + \underline{A} \\ B \ 2 \end{array} \Rightarrow \begin{array}{r} 8 \\ + \underline{4} \\ 1 \ 2 \end{array}$$

THE CHALLENGE: Find the value of A, B, C, and D in these puzzles.

$$\begin{array}{r} A \\ + \underline{6} \\ B \ B \end{array} \qquad \begin{array}{r} C \\ + \underline{6} \\ D \end{array}$$

EXPLORATION: Make some letter substitution puzzles for your friends to solve.

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Letter Substitutions – 3 – Notes

THE CHALLENGE: For $A + A + 6 = BB$: The largest number $B + B + 6$ can be is $9 + 9 + 6 = 24$, so B is either 1 or 2. $A + A + 6$ must be an even number, so $B = 2$. $A + A + 6 = 22$ means $A + A = 16$, so $A = 8$.

So, the answer is $8 + 8 + 6 = 22$.

$C + C + 6 = D$: The only way that $C + C + 6$ can be less than 10 is if C is 1.

The answer is $1 + 1 + 6 = 8$.