

Putting It All Together

To recap: this program solves alphametic puzzles by brute force, i.e. through an exhaustive search of all possible solutions. To do this, it...

1. Finds all the letters in the puzzle with the `re.findall()` function
2. Find all the unique letters in the puzzle with sets and the `set()` function
3. Checks if there are more than 10 unique letters (meaning the puzzle is definitely unsolvable) with an `assert` statement
4. Converts the letters to their ASCII equivalents with a generator object
5. Calculates all the possible solutions with the `itertools.permutations()` function
6. Converts each possible solution to a Python expression with the `translate()` string method
7. Tests each possible solution by evaluating the Python expression with the `eval()` function
8. Returns the first solution that evaluates to `True`

...in just 14 lines of code.