

Problem of the Week

Problem E

Faster Adder Required

One day Matt was challenged to find the sum of all the three-digit numbers that could be made by choosing three different digits from the list $\{1, 2, 3, 4, 5, 6, 7\}$.

Unsure of how to proceed, Matt started adding the numbers:



$$\begin{array}{r}
 123 \\
 + 124 \\
 \hline
 247 \\
 + 125 \\
 \hline
 372 \\
 + 126 \\
 \hline
 498 \\
 \vdots
 \end{array}$$

After finding the sum of just the first four possible numbers, Matt concluded that there had to be a better way.

Using a “better way”, determine the sum of all the three-digit numbers that can be made by choosing three different numbers from the list $\{1, 2, 3, 4, 5, 6, 7\}$.

