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:

\[
\begin{array}{c}
1 & 2 & 3 \\
+ & 1 & 2 & 4 \\
\hline
2 & 4 & 7 \\
+ & 1 & 2 & 5 \\
\hline
3 & 7 & 2 \\
+ & 1 & 2 & 6 \\
\hline
4 & 9 & 8 \\
\end{array}
\]

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\}.