Tournament

1. In the following seven problems, one letter denotes exactly one digit, and different letters denote different digits. Write down which digit corresponds to each of the letters.

(1)

\[
\begin{align*}
\text{F} & \text{O} \text{R} \text{T} \text{Y} \\
+ & \text{T} \text{E} \text{N} \\
+ & \text{T} \text{E} \text{N} \\
\text{S} & \text{I} \text{X} \text{T} \text{Y}
\end{align*}
\]

(2)

\[
\begin{align*}
\text{S} & \text{E} \text{V} \text{E} \text{N} \\
+ & \text{S} \text{E} \text{V} \text{E} \text{N} \\
+ & \text{S} \text{I} \text{X} \\
\text{T} & \text{W} \text{E} \text{N} \text{T} \text{Y}
\end{align*}
\]

(3)

\[
\begin{align*}
\text{E} & \text{I} \text{N} \text{S} \\
+ & \text{E} \text{I} \text{N} \text{S} \\
+ & \text{E} \text{I} \text{N} \text{S} \\
+ & \text{E} \text{I} \text{N} \text{S} \\
+ & \text{E} \text{I} \text{N} \text{S} \\
\text{F} & \text{Ü} \text{N} \text{F}
\end{align*}
\]

2. Sarah, John, and Alex are taking a bus tour of Disneyland. Each of them must pay 5 plastic chips for the ride, but they have only plastic coins of values 10, 15, and 20 chips (each has unlimited number of each type of coins). How can they pay for the ride?
3. Jack tore out successive pages from a book. The number of the first page he tore out was 183, and the number of the last page he tore out had the same digits 1-8-3 in some order. How many pages did Jack tear out of the book?

4. There are 24 pound of nails in a sack. Can you measure out 9 pounds of nails using only a balance with 2 pans?

5. A caterpillar crawls up a pole 75 inches high, starting from the ground. Each day it crawls up 5 inches, and each night it slides down 4 inches. When will it first reach the top of the pole?