2025 SSMO Relay Round 1

SMO Team

RR 1 Part 1: Let $x_1, x_2, \ldots, x_7$ be distinct integers such that the mean of $\{x_i, x_{i+1}, x_{i+2}\}$ is an integer for all integers $1 \leq i \leq 5$. Find the minimum possible positive value of $x_7 - x_1$.

RR 1 Part 2: Let $T = TNYWR$. A positive integer is called *zro* if more than half of its digits are 0. Find the sum of the first T^2 zro numbers.

RR 1 Part 3: Let $T = TNYWR$. Positive integers m and n satisfy $m^2 - n^2 = T$. What is the least possible value of $m + n$?