# ACTIVITY 1.X

## Peano's Axioms for the Natural Numbers

(1) Consider the set $\mathbb{N}$ of all positive odd integers. For each odd integer $n$, define $n+$ to be $n+2$. Which of the Peano axioms are satisfied by this system?
(2) Use the principle of mathematical induction to show that $1 + 3 + 5 + \ldots + (2n - 1) = n^2$ for every positive integer $n$.
(3) Give a recrusive definition for the sequence of odd natural numbers.

*Date*: September 21, 2023.