Name: _____ QUIZ 17  MATH 300
November 12, 2024

1. (4 pts.) Write the multiplication table for $\mathbb{Z}_4$.

2. (4 pts.) Suppose $[a], [b] \in \mathbb{Z}_{15}$. Prove or disprove: If $[a] \cdot [b] = [0]$, then $[a] = [0]$ or $[b] = [0]$.

3. (4 pts.) Consider the partition $P = \Big\{\{0\},\ \{-1, 1\},\ \{-2, 2\},\ \{-3, 3\}, \{-4, 4\}, \dots\Big\}$ of $\mathbb{Z}$.
Describe the equivalence relation R whose equivalence classes are the elements of P.
Express your answer in the form "mRn means ...."