

## ASSIGNMENT

### **Peano's Axioms for the Natural Numbers**

- (1) Consider the set  $D_n \subset \mathbb{N} \times \mathbb{N}$ . The elements of  $D_n$  are  $(x, y)$  where  $0 \leq x \leq y \leq n$ . e.g.,  $D_2 = \{(0, 0), (0, 1), (0, 2), (1, 1), (1, 2), (2, 2)\}$ . What is the cardinality of  $D_n$ ?