

CIS 160

Recitation Guide - Week 2

Topics Covered: Set Proofs, Permutations, Combinations, Inclusion-Exclusion (PIE)

Problem 1: Prove that

$$(A \cup B) \setminus C = (A \setminus C) \cup (B \setminus C)$$

Problem 2:

Given numbers 1 to 9, how many permutations of the numbers do not have at least 7 consecutively increasing numbers? Note that the sequence 1, 2, 3 is consecutively increasing, while 1, 4, 6 is not.

Problem 3:

Consider words made from the letters a, b, c, d . How many such words of length 10 have exactly 3 a 's and 2 b 's?