

Name: \_\_\_\_\_

**MATH 308**

**Fall 2023**

**HW 15: Due 11/10**

*“One reason why Combinatorics has been slow to become accepted as part of mainstream Mathematics is the common belief that it consists of a bag of isolated tricks, a number of areas. . . with little or no connexion between them. We shall see that they have numerous threads weaving them together into a beautifully patterned tapestry.”*

*–Richard K. Guy*

**Problem 1.** (10pt)