

**MATH 113: DISCRETE STRUCTURES  
HOMEWORK FOR WEDNESDAY WEEK 9**

*Problem 1.* What is the expected value of the number of digits equal to 3 in a 4-digit positive integer?

*Problem 2.* Let  $\pi$  be a permutation of  $\underline{n}$ . The index  $i$  is called an *excedance* of  $\pi$  if  $\pi(i) > i$ . How many excedances does the average permutation of  $\underline{n}$  have?