MATH 10B with Prof. Stankova
Section#208; time: 2-3:30pm
GSI: Ninh DO

Quizz 1 Solution

Student:
SID:
Tue 1/29/19

True/False - No explanation needed. (2pts)

1. Shuffle the order of stages (or subprocesses) in a counting process does not effect the final result when the subprocesses are independent of each other. True/False
   True

2. The union of n subsets is the addition of all individuals subset substractring their overlapping parts. True/False
   False

Problems - Need justification. No justification means **zero**!

1. How many functions are there from the set $\{1, 2, 3, 4\}$ to the set $\{1, 2\}$? (5pts)

   Each element in $\{1, 2, 3, 4\}$ has 2 ways to be mapped into $\{1, 2\}$. There are 4 elements in $\{1, 2, 3, 4\}$. So the answer is $2 \times 2 \times 2 \times 2 = 2^4$

2. How many 5-element RNA sequences contain at least one A? (5pts)
   Hint: Each element can be either A, C, G, U.

   Using complementary rule: $A = all - A^c = 4^5 - 3^5$, where all is the number of all possible 5-element RNA sequences, A^c is the number of the 5-element RNA sequences contain no A.