

Math 10B with Professor Stankova

Quiz 3; Tuesday, 2/12/2019

Section #206; Time: 9:30 AM

GSI name: Roy Zhao

Name: _____

Circle True or False or leave blank. (1 point for correct answer, -1 for incorrect answer, 0 if left blank)

1. True False The formula for the number of ways to place b indistinguishable balls into u distinguishable urns injectively if $b > u$ is 0 not $\binom{u}{b}$.
2. True False For any stable marriage problem, there is only one stable matching.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points) (a) (4 points) How many ways can I buy 250 bubble teas from RareTea for an event if there are 8 different options to choose from?

- (b) (4 points) The most popular option is original milk tea. How many ways can I do this if I need at least 30 of that option and at least 10 of every other option?

- (c) (2 points) Suppose men and women have the preferences $m_1 : w_1 > w_3 > w_2, m_2 : w_2 > w_1 > w_3, m_3 : w_3 > w_2 > w_1$ and $w_1 : m_1 > m_2 > m_3, w_2 : m_2 > m_3 > m_1, w_3 : m_3 > m_2 > m_1$. Is the matching $(m_1, w_1), (m_2, w_3), (m_3, w_2)$ stable?